



Tasmanian  
Gas Pipeline

# Offshore Environment Plan

TGP-698-PA-HSE-003

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## ACRONYMS, ABBREVIATIONS AND UNITS OF MEASUREMENT

Abbreviations, acronyms, terms and units of measurement have been used throughout this Offshore Environment Plan and are described/defined below:

|                      |  |
|----------------------|--|
| ACAP                 | Agreement on the Conservation of Albatrosses and Petrels   |
| ADIOS                | Automated Data Inquiry for Oil Spills  |
| ALARP                | As Low As Reasonably Practicable   |
| AMA                  | Asset Management Agreement   |
| AMP                  | Australian Marine Park   |
| AMSA                 | Australian Maritime Safety Authority   |
| APPEA                | Australian Petroleum Production and Exploration Association  |
| AS                   | Australian Standard  |
| ASME                 | American Society for Mechanical Engineers  |
| AUV                  | Autonomous Underwater Vehicle  |
| BHP                  | BHP Billiton   |
| Behavioural response | The threshold for behavioural response represents the level at which a moderate behavioural response may occur, such as changes in swimming speed, direction and dive profile, localised deviations in migratory patterns, brief to moderate shift in group distribution, short term cessation or modification of vocal behaviour. |
| BIA                  | Biologically Important Area  |
| BOM                  | Bureau of Meteorology  |
| CA                   | Control Agency   |
| CAMBA                | China-Australia Migratory Bird Agreement 1986  |
| CMS                  | Convention on the Conservation of Migratory Species of Wild Animals  |
| CMT                  | Crisis Management Team   |
| COLREGs              | Convention on the International Regulations for Preventing Collisions at Sea 1972  |
| CP                   | Cathodic Protection  |
| dB                   | Decibels   |
| DC                   | Direct Current   |
| DCCEEW               | Department of Climate Change, Energy, Environment and Water (Commonwealth)   |
| DEECA                | Department of Energy, Environment and Climate Action (VIC)   |
| DEH                  | Department of Environment and Heritage (now DoEE)  |
| DEI                  | Duke Energy International  |
| DELWP                | Department of Environment, Land, Water and Planning, Victoria  |
| DNV                  | Det Norske Veritas   |
| DNP                  | Director of National Parks (Commonwealth)  |
| DoE                  | Department of the Environment (now DoEE)   |

|          |  |
|----------|--|
| DoEE     | Department of the Environment and Energy (formerly DSEWPAC and DoE)                      |
| DPIPWE   | Department of Primary Industries, Populations, Water and the Environment (Tasmania)      |
| DSE      | Department of Sustainability and Environment, Victoria (now DELWP)                       |
| DSEWPAC  | Department of Sustainability, Environment, Water, Populations and Communities (now DoEE) |
| DTP      | Department of Transport and Planning   |
| EAPL     | Esso Australia Pty Ltd   |
| EEZ      | Exclusive Economic Zone  |
| EMBA     | Environment that May Be Affected   |
| EMP      | Environmental Management Plan  |
| EMPCA    | <i>Environmental Management and Pollution Control Act 1994 (TAS)</i>                     |
| EMS      | Environmental Management System  |
| EMT      | Environmental Management Team  |
| EP       | Environment Plan   |
| EPA      | Environment Protection Authority   |
| EP Act   | <i>Environment Protection Act 2017 (Victoria)</i>  |
| EPBC Act | <i>Environmental Protection and Biodiversity Conservation Act 1999</i>                   |
| EPP      | Environment Protection Policy (Tasmania)   |
| ERA      | Environmental Risk Assessment  |
| ERMP     | Emergency Response Management Plan (NM2-002PA-ERMP)                                      |
| ERP      | Emergency Response Plan  |
| ERS      | <i>Environment Reference Standard 2021 (Victoria)</i>                                    |
| ERT      | Emergency Response Team  |
| ESD      | Ecologically Sustainable Development   |
| ESV      | Energy Safe Victoria   |
| FSA      | Formal Safety Assessment   |
| GED      | General Environmental Duty   |
| GHS      | Globally Harmonized System of Classification and Labelling of Chemicals                  |
| GIS      | Geographical Information System  |
| GN       | Guidance Note  |
| GPS      | Global Positioning System  |
| ha       | hectare  |
| HAZID    | Hazard Identification (Study)  |
| HAZOP    | Hazard and Operability (Study)   |
| HB       | Handbook   |

|                 |   |
|-----------------|---|
| HDD             | Horizontal directional drilled  |
| HSE             | Health, Safety and Environment  |
| HSEMS           | Health, Safety and Environmental Management System  |
| IACS            | International Association of Classification Societies   |
| IAPPC           | International Air Pollution Prevention Certificate  |
| ICAM            | Incident Cause Analysis Method  |
| IMCA            | International Marine Contractors Association  |
| IMDG Code       | International Maritime Dangerous Goods Code   |
| IMO             | International Maritime Organisation   |
| Impulse/Pulse   | A measure of sound pressure at a nominal distance of 1 m from a theoretical point source that radiates the same total sound power as the actual source. Source level can be expressed as an SPL, SEL or PK. Unit: dB re $1 \mu \text{Pa}^2\text{m}^2$ (pressure level) or dB re $1 \mu \text{Pa}^2\text{m}^2\text{s}$ (exposure level). |
| IMS             | Invasive Marine Species   |
| IOPPC           | International Oil Pollution Prevention Certificate  |
| IP              | Intersection Point  |
| ISO             | International Standards Organisation  |
| ISPPC           | International Sewage Pollution Prevention Certificate   |
| IUCN            | International Union for Conservation of Nature  |
| JA              | Jurisdictional Authority  |
| JAMBA           | Japan-Australia Migratory Bird Agreement 1974   |
| JHA             | Job Hazard Analysis   |
| KEF             | Key Ecological Feature  |
| kg              | kilogram  |
| kHz             | kilohertz   |
| km              | kilometre   |
| km <sup>2</sup> | square kilometre  |
| KP              | Kilometre Point   |
| KPI             | Key Performance Indicator   |
| kV              | kilovolts   |
| L               | litre   |
| LAT             | Lowest Astronomical Tide  |
| Lat.            | Latitude  |
| LCC             | Land Conservation Council   |
| LCS             | Longford Compressor Station   |
| LEL             | Lower Explosive Limit   |

|                |  |
|----------------|--|
| LOC            | Loss of containment  |
| Long.          | Longitude  |
| m              | metres   |
| m <sup>3</sup> | cubic metres   |
| mm             | millimetres  |
| m/s            | metres per second  |
| MARPOL         | International Convention for the Prevention of Pollution from Ships                            |
| MARS           | Maritime Arrivals Reporting System   |
| Masking        | Acoustic masking may occur when a noise impedes the ability of an animal to perceive a signal. |
| MAST           | Marine and Safety Tasmania   |
| MDO            | Marine Diesel Oil  |
| MFO            | Marine Fauna Observer  |
| MGO            | Marine Gas Oil   |
| MLV            | Main Line Valve  |
| MMO            | Marine Mammal Observer   |
| MNES           | Matters of National Environmental Significance   |
| MPA            | Marine Protected Area  |
| MPa(g)         | Mega Pascals (gauge)   |
| MRT            | Mineral Resources Tasmania, a division of the Department of State Growth                       |
| MSDS           | Materials Safety Data Sheet  |
| NM             | Nautical Mile  |
| NB             | Nominal Bore   |
| NEBA           | Net Environmental Benefit Analysis   |
| NEPC           | National Environment Protection Council  |
| NEPM           | National Environment Protection Measures   |
| NOAA           | National Oceanic and Atmospheric Administration (USA)  |
| NOHSC          | National Occupational Health and Safety Commission   |
| NOPSEMA        | National Offshore Petroleum Safety and Environmental Management Authority                      |
| NOx            | Oxides of Nitrogen   |
| NOPTA          | National Offshore Petroleum Titles Administrator   |
| NoT            | Notice of Termination  |
| NPI            | National Pollutant Inventory   |
| NSW            | New South Wales  |
| NZS            | New Zealand Standard   |

|                   |  |
|-------------------|--|
| OA                | Operating Area   |
| OIW               | oil in water   |
| OPEP              | Oil Pollution Emergency Plan   |
| OPGGs Act         | <i>Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Commonwealth)</i><br><i>Offshore Petroleum and Greenhouse Gas Storage Act 2010 (Victoria)</i>   |
| OPRC              | International Convention on Oil Pollution Preparedness, Response and Cooperation   |
| OPRC-HNS Protocol | Protocol on Preparedness, Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances  |
| OSMP              | Operational and Scientific Monitoring Plan   |
| OSDAS             | OSD Asset Services   |
| OSRA              | Oil Spill Response Atlas   |
| OSTM              | Oil Spill Trajectory Model   |
| OTTER             | Office of the Economic Regulator, Tasmania   |
| OWS               | Oily Water Separator   |
| PIMS              | Palisade Integrated Management Services  |
| PEM               | Protocol for Environmental Management  |
| PJ                | Petajoule  |
| PK                | Zero-to-Peak Sound Pressure<br>The greatest magnitude of the sound pressure during a specified time interval. PK levels are modelled to assess mortality and potential mortality to fish larvae and eggs, fish and turtles. A simple sound wave and three common methods to characterise the loudness of sounds, including zero-to-peak sound pressure. Unit: dB re 1µPa                         |
| PK-PK             | Peak-to-Peak Sound Pressure. Impulsive sounds.<br>Sum of the peak compressional pressure (highest pressure variation) and the peak rarefactional pressure (lowest pressure variation) during a specified time interval. PK-PK is the difference between the minimum and maximum instantaneous sound pressure levels in a stated frequency band attained by an impulsive sound. Unit: dB re 1µPa. |
| POLREP            | Pollution Report   |
| PPE               | Personal Protective Equipment  |
| PSLA              | <i>Petroleum (Submerged Lands) Act 1982 (Tasmania)</i>   |
| PTS               | Permanent Threshold Shift.<br>Permanent loss of hearing sensitivity caused by excessive noise exposure. It is considered an auditory injury. If a TTS does not return to normal, the residual shift is called a PTS.   |
| PTW               | Permit to Work   |
| PWS               | Parks and Wildlife Service (Tasmania)  |
| RBI               | Risk-Based Inspection  |
| RCA               | Root Cause Analysis  |
| RMC               | Remote Monitoring Centre   |
| RMSA              | Remote Monitoring Service Agreement  |

|         |  |
|---------|--|
| ROKAMBA | Republic of Korea-Australia Migratory Bird Agreement 2002  |
| ROV     | Remotely Operated Vehicle  |
| SA      | Standards Australia  |
| SCADA   | Supervisory Control and Data Acquisition system  |
| SDS     | Safety Data Sheet  |
| SDO     | State Duty Officer   |
| SEL     | Sound Exposure Level<br>A measure related to the sound energy in one or more pulses, or the ratio of the time integrated squared sound pressure to the specified reference value. Unit: dB re 1µPa <sup>2</sup> ·s.  |
| SEPP    | State Environmental Protection Policy (Victoria)   |
| SETFIA  | South East Trawl Fishing Industry Association  |
| SITREP  | Situational Report   |
| SOLAS   | International Convention on the Safety of Life at Sea 1974   |
| SOPEP   | Shipboard Oil Pollution Emergency Plan   |
| SOx     | Sulphur Oxides   |
| SPL     | Root-mean-square Sound Pressure Level<br>The decibel ratio of the time-mean-square sound pressure, in a stated frequency band, to the square of the reference sound pressure over the duration of the acoustic event (i.e., the duration of a single sound pulse).<br>Because the SPL represents the effective sound pressure over the full duration of the acoustic event rather than the maximum instantaneous peak pressure (PK or PK-PK), it is regularly used to represent the effective or perceived loudness of a sound and to assess the potential for a behavioural response from marine fauna. Unit: dB re 1µPa. |
| SPRAT   | Species Profile and Threats Database   |
| SREC    | Safety Resilience and Emergency Coordination (Part of DTP)   |
| SSS     | Side Scan Sonar  |
| STCW    | International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978   |
| t       | tonnes   |
| TAS     | Tasmania   |
| TEC     | Threatened Ecological Community  |
| TGP     | Tasmanian Gas Pipeline   |
| TGPPL   | Tasmanian Gas Pipeline Pty Ltd   |
| TJ      | Terajoule  |
| TP      | Tangent Point  |
| TSV     | Transport Safety Victoria  |
| TTS     | Temporary Threshold Shift<br>Temporary loss of hearing sensitivity caused by excessive noise exposure.<br>Exposure to sufficiently intense sound may lead to an increased hearing threshold in any living animal capable of perceiving acoustic stimuli (Finneran, 2016). If this shift is   |

|        |  |
|--------|--|
|        | <p>reversed and the hearing threshold returns to normal, the effect is called a TTS. The onset of TTS is often defined as threshold shift of 6dB above the normal hearing threshold (Southall, et al., 2019).</p> <p>Impairment to the hearing apparatus of a marine animal may result from a fatiguing stimulus measured in terms of SEL, which considers the sound level and duration of the exposure signal. Intense sounds may also damage the hearing apparatus independent of duration, so an additional metric of peak pressure (PK) is needed to assess acoustic exposure impairment risk.</p> |
| UNEP   | United Nations Environment Programme   |
| UNESCO | United Nations Educational, Scientific and Cultural Organisation   |
| USV    | Uncrewed Surface Vessel  |
| VIC    | Victoria   |
| VIV    | Vortex Induced Vibrations  |
| VOCs   | Volatile Organic Compounds   |
| WPS    | Worley Power Services  |
| ZPI    | Zone of Potential Impact, also referred to as the Environment that May Be Affected (EMBA)  |
| °C     | degrees Celsius  |
| %      | percent  |

## 1. INTRODUCTION

### 1.1 Titleholder

For the purposes of this Offshore Environment Plan (EP), the titleholder and nominated liaison person is:

Wacek Lipski  
Chief Executive Officer  
Tasmanian Gas Pipeline Pty Ltd (TGPPL)  
Address: Level 37, 360 Elizabeth Street, Melbourne VIC 3000  
Phone: 03 9044 1123  
Email: [enquiries@tasmaniangaspipeline.com.au](mailto:enquiries@tasmaniangaspipeline.com.au)

Details of the titleholder's nominated liaison person will be published on the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) website. In the event of a change in the titleholder or nominated liaison person, the change will be communicated by TGPPL as soon as practicable by email, to:

- NOPSEMA - [submissions@nopsema.gov.au](mailto:submissions@nopsema.gov.au)
- Victorian Minister for Energy and Resources – [petroleum.licensing@deeca.vic.gov.au](mailto:petroleum.licensing@deeca.vic.gov.au)
- Tasmanian Resources Minister – [info@mrt.tas.gov.au](mailto:info@mrt.tas.gov.au) .

### 1.2 Background and Purpose

Tasmanian Gas Pipeline Pty Ltd submits this EP under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023* as a requirement of the renewal and maintenance of an accepted EP in place for any petroleum or greenhouse gas activity, Regulation 41.

Additionally, this EP has been prepared in accordance with the requirements of the:

- *Victorian Offshore Petroleum and Greenhouse Gas Storage (OPGGS) Act 2010* and the *OPGGS Regulations 2021*;
- *Tasmanian Petroleum (Submerged Lands) Act 1982* and the *Petroleum (Submerged Lands) (Management of Environment) Regulations 2022*.

TGPPL is the operator of the Tasmanian Gas Pipeline (TGP) and is required to have an EP that covers all their offshore petroleum activities.

#### 1.2.1 Background

Commissioned in 2002, the TGP is the only pipeline supplying natural gas to Tasmania. The pipeline extends from Longford in Victoria, across Bass Strait to Bell Bay in north-east Tasmania. The offshore section of the TGP is approximately 301 km in length with a maximum water depth along the route of 77 m. Additional onshore pipelines extend from Bell Bay to Port Latta in north-west Tasmania and to Bridgewater in the south.

In July 2011, Palisade Investment Partners Ltd (Palisade) acquired Tasmanian Gas Pipeline Pty Ltd and its asset, the TGP. Palisade has kept the asset ownership and licence title "Tasmanian Gas Pipeline Pty Ltd" (TGPPL). Palisade is a specialist, independent infrastructure manager that focuses on assets that are essential to the efficient functioning of the communities and economies they serve.

An Asset Management Agreement (AMA) is in place between Palisade Integrated Management Services (PIMS) and TGPPL. Through the AMA, PIMS take on key roles within the TGPPL organisation structure. While TGPPL itself does not have any direct employees, for the purpose of this EP, PIMS personnel allocated to the TGPPL organisational structure are considered TGPPL employees.

TGPPL is the Facility Operator of the offshore section with responsibility for the ongoing operation and integrity, safety, and environmental management. TGPPL have an in-house operations team (via

the AMA with PIMS) and utilise specialist consultants and contractors to provide expert advice and engineering assistance when required. TGPPL does not directly employ field staff to manage, operate or maintain the pipeline. Instead, it has several field service agreements in place to ensure the continued operation of the pipeline.

A Field Services Agreement is in place between Zinfra Group (Zinfra) and TGPPL to perform maintenance activities on the TGP. Zinfra carry out certain onshore maintenance functions and provide emergency response for TGPPL if the subsea section requires isolation.

Zinfra Group is a leading service provider to the utility infrastructure sector. They deliver a comprehensive range of engineering, operations, maintenance, and construction services nationally. Their services include asset management, engineering, design, project management, construction, maintenance, and asset operations.

TGP has a remote monitoring service agreement (RMSA) with Worley Power Services (WPS). The Remote Monitoring Centre (RMC) is responsible for monitoring the pipeline’s condition and performance through remote sensors on a 24 hours per day, 365 day per year basis. Services provided by WPS primarily relate to the operation of the Supervisory Control and Data Acquisition (SCADA) system for the TGP in addition to assisting with the management of any emergency event arising on the TGP.

WPS is a wholly owned entity of Worley, an Australian engineering company providing project delivery and consulting services to the resources and energy sectors, and complex process industries.

These reporting structures are shown in the organisation structure for TGGPL in Figure 1-1 below.

### TGPPL Organisation

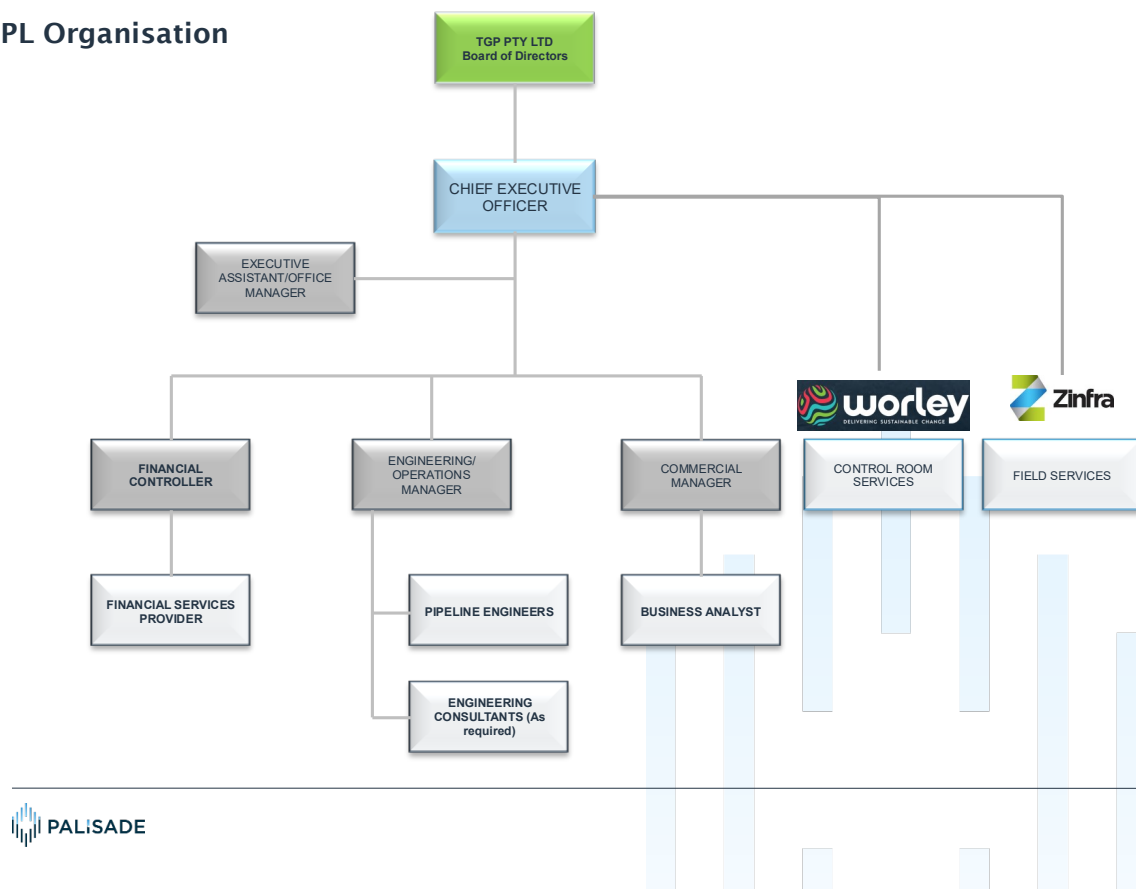


Figure 1-1: TGPPL Organisation Chart

### 1.2.2 Purpose

The key purpose for this EP is to demonstrate the 5-year update covers:

- Regulatory requirements and maintains compliance with environmental obligations in accordance with the TGP pipeline licences, *Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023* and State offshore petroleum legislation.
- Operations requirements and activities for the next 5-years are defined.
- Identification, analysis, and appropriate environmental risk management controls are described for planned and unplanned activities to demonstrate reduction of risk to environment to As Low as Reasonably Practicable (ALARP).
- Ensuring controls are consistent with the principles of ecologically sustainable development, to be consistent with Section 3A of the *Environment Protection and Biodiversity Conservation Act 1999*.
- Providing methodology for processes and documentation to substantiate the controls, actions and considerations made within the EP.
- Defining environmental performance outcomes (EPO) and environmental performance standards (EPS).
- Provide details of consultation process, highlight objections or comments, and demonstrate consideration and implementation of reasonable controls from feedback or objections provided through the consultation process.

Additional objectives of the EP will support TGPPL in:

1. Ensuring implementation of TGPPL's and its contractor's environment policies and environmental management systems (EMS).
2. Assist TGPPL employees and contractors to operate and maintain the Offshore TGP in a manner that minimises potential impacts to the marine environment and third parties, including but not limited to:
  - benthic sedimentation and disturbance
  - disturbance to protected marine fauna
  - pollution of land, air and water
  - disruption to other commercial activities
  - disturbance to other legitimate marine users
  - production, handling and disposal of waste
  - disturbance to pipeline integrity
  - disturbance to archaeological, anthropological and other heritage sites of significance; and
  - the spread of introduced marine pests
3. Review and update the following activities that assist contractors and employees in conducting their inspections and maintenance activities:
  - staff induction and training
  - routine surveillance and monitoring of the pipeline
  - maintenance procedures with respect to environmental aspects; and
  - performance and compliance audits of the pipeline and facilities

The Offshore EP shall be reviewed and updated in accordance with TGP licence requirements and in consultation with the relevant regulatory authorities. This EP shall remain valid for 5 years from the date of acceptance by NOPSEMA as per the OPGGS Environment Regulations (2023) and will be due for renewal again every 5 years, as per Regulation 41. During this period, if a change or proposed change to circumstance or operations occurs, Regulation 39 requires TGPPL to determine whether this would require a revision and resubmission of the EP prior to the 5-year renewal (refer to Section 8.5.5). Additionally, a request for a revision of an EP may be given by NOPSEMA under Regulation 40 which would also trigger a revision process, refer to NOPSEMA Guideline 1705 (NOPSEMA, 2024b).

### 1.3 Scope

This Offshore Environment Plan (EP) focuses on the Bass Strait subsea section of the TGP from the low water mark at Ninety Mile Beach, about one kilometre (km) east of Seaspray, Victoria, to the low water mark at Five Mile Bluff on the coast of Tasmania, including a portion of the drilled crossings at the Victorian and Tasmanian landfalls.

The Longford Compressor Station (LCS) – owned by Jemena - is covered by a separate Environmental Improvement Plan (PO-510-PA-EV-001), as required by the Victorian Environment Protection Authority (EPA) licence for this facility (LA42297). Similarly, the onshore section of the pipeline in Victoria for the *Petroleum Regulations 2021 Part 7 – Division 2* and Tasmania's *Petroleum (Submerged Lands) (Management of Environment) Regulations 2022 Part 2*, is covered by a separate Onshore Environment Management Plan (TGP-698-PA-HSE-001).

The following State and Commonwealth pipeline licences apply to the offshore section of the TGP and this EP:

**Table 1-1: TGGPL Offshore Pipeline Licences**

| Coverage                              | Route   | Licence No.  | Date Granted |
|---------------------------------------|---|--------------|--------------|
| <b>State Offshore Victoria</b>        | The route of the pipeline starts at the high-water mark on Ninety Mile Beach east of Seaspray at Lat. 38°22'10", Long. 147°14'15", and continues to the point of intersection with the 3 nautical mile (nm) limit at Lat. 38°24'50", Long. 147°14'15".  | Vic/PL 30(V) | 20/11/2001   |
| <b>State Offshore Tasmania</b>        | The pipeline commences from the low water mark near Five Mile Bluff, Tasmania Lat. 41°01'50", Long. 146°53'30", and proceeds from there to the Tasmanian 3 nm limit where the pipeline crosses Lat. -40°58'20", 146°53'40".   | T/PL2-TAS    | 14/11/2001   |
| <b>Commonwealth Offshore Victoria</b> | The pipeline route follows a straight line from the intersection point with the 3 nm limit at Lat. 38°22'10", Long. 147°14'15", to a point at Lat. 38°30'00", Long. 147°18'00". The pipeline route then follows a straight line between that point and the boundary of the adjacent area at Lat. 39°12'00", Long. 147°06'25". | Vic /PL 30   | 19/11/2001   |
| <b>Commonwealth Offshore Tasmania</b> | The pipeline route follows a straight line from the intersection point with the 3 nm limit at Lat. 40°58'20", Long. 146°53'40", to a point at Lat. 39°30'00", Long. 147°02'00". The pipeline route then follows a straight line between that point and the boundary of the adjacent area at Lat. 39°12'00", Long. 147°06'25". | T/PL1-COMM   | 21/11/2001   |

The TGP operational areas described in Table 1-2 are located within Victorian, Tasmanian and Commonwealth waters. The regulatory framework for offshore petroleum activities in each of these jurisdictions is shown below. Activities excluded from the scope of this EP are vessels transiting to and from the operational area. The inspection and maintenance vessels are considered part of the TGP 'petroleum activity' while within the operational areas as defined below.

**Table 1-2: TGPPL Operational Areas**

|                            | Victorian waters  | Tasmanian waters  | Commonwealth waters  |
|----------------------------|---|---|--|
| <b>Operational area</b>    | Within 200 m of the pipeline from high water mark on Ninety Mile Beach east of Seaspray, Victoria to 3 NM limit.                    | Within 200 m of the pipeline, from low water mark at Five Mile Bluff, Tasmania to 3 NM limit.                               | Within the 200 m of the pipeline, between the Victorian and Tasmanian 3 NM limits.   |
| <b>Act and Regulations</b> | <i>Offshore Petroleum and Greenhouse Gas Storage Act 2010</i><br><br>Offshore Petroleum and Greenhouse Gas Storage Regulations 2021 | <i>Petroleum (Submerged Lands) Act 1982</i><br><br>Petroleum (Submerged Lands) (Management of Environment) Regulations 2022 | <i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i> (OPGGS Act)<br><br>Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (OPGGS(E) Regulations)<br><br><i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)* |
| <b>Regulator</b>           | Department of Energy, Environment and Climate Action (DEECA)  | Mineral Resources Tasmania (MRT), a division of the Department of State Growth  | National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)  |

\*The EPBC Act specifically governs the assessment of potential risks and impacts on matters of national environmental significance (MNES). The OPGGS Act and the EPBC Act are administered by NOPSEMA in relation to offshore petroleum activities.

## 1.4 Environmental Plan Summary

As required by Regulation 35(7), a summary table of the content within the EP is included in Table 1-3.

**Table 1-3: Environmental Plan Summary**

| Summary material requirement   | Legislative Reference                             |                                 |   | Relevant section of EP containing EP Summary material   |
|--|---|---------------------------------|---|---|
|  | Commonwealth OPGGS (Environment) Regulations 2023 | Victoria OPGGS Regulations 2021 | Tasmania Petroleum (Submerged Lands) (Management of Environment) Regulations 2022 |   |
| The location of the activity   | Reg 21(1)   | Reg 15(1)                       | Reg 15(a)   | Section 2.1.1   |
| A description of the receiving environment   | Reg 21(2), (3)                                    | Reg 15(2)                       | Reg 16(1)   | Section 4   |
| A description of the activity  | Reg 21(1)   | Reg 15(1)                       | Reg 15  | Section 2.2.1 (Planned), 2.2.2 (Unplanned)  |
| Description of the legislative requirements  | Reg 21(4)   | Reg 15(3)(a)-(b)                | Reg 17(4)(a)  | Section 3   |
| Details of the environmental impacts and risks   | Reg 21(5)(a)-(b); 21(6)                           | Reg 15(3)-(4)                   | Reg 16(2)   | Sections 6.2.2, 6.3.2, 6.4.2, 6.5.2, 6.6.2, 6.7.2, 6.8.2, 6.9.2, 6.10.2, 6.11.2               |
| The control measures for the activity  | Reg 21(5)(c)                                      | Reg 15(5)                       | Reg 17  | Sections 6.2.4, 6.3.4, 6.4.4, 6.5.4, 6.6.4, 6.7.4, 6.8.4, 6.9.4, 6.10.4, 6.11.4<br>Appendix F |
| The arrangements for ongoing monitoring of the titleholder's environmental performance | Reg 21(7), 22(1)-(7)                              | Reg 16                          | Reg 19  | Section 8.5   |
| Response arrangements in the oil pollution emergency plan                              | Reg 22(8)-(14)                                    | Reg 17                          | Reg 20  | Section 9.4   |
| Consultation already undertaken and plans for ongoing consultation                     | Reg 22(15), 24(b), 25                             | Reg 16(8)                       | Reg 14, 22  | Section 10  |
| Details of the titleholders nominated liaison person for the activity                  | Reg 23  | Reg 18                          |   | Section 1.1   |

## 1.5 Environment Policy

Tasmanian Gas Pipeline Pty Ltd is committed to excellence in environmental management. This will be achieved by:

- Recognising that environmental management is a corporate priority that should be integrated into all business processes from the purchase of goods to the provision of asset management services.
- Conducting all activities in a manner consistent with the principles of sustainable management and caring for the environment.
- Developing an environmentally aware culture by demonstrating management commitment, continuously improving management systems and providing the time and resources to educate and train employees and contractors.
- Implementing management strategies to meet current and anticipated environmental performance standards and communicating these to all service providers and stakeholders.
- Consulting the local community on its concerns, aspirations and values and ensuring that local heritage will be respected, and historic places and artifacts preserved.
- Identifying and minimizing risks by continuously assessing, controlling and monitoring environmental aspects and impacts.
- Actively seeking ways to minimize the impact of our assets on the environment by reducing usage of resources wherever possible.
- Complying with all relevant legislation, regulations, codes of practices and standards.
- Supporting Palisade Investment Partners decarbonization targets and ensuring targets are met.

We will measure our success by achieving our goal of zero reportable environmental incidents each year and reducing or maintaining our overall level of resource consumption.

## 2. PIPELINE OVERVIEW AND OPERATIONS

### 2.1 Description of the Operational Features

#### 2.1.1 Determination of the Environment that May Be Affected

Stochastic hydrocarbon dispersion and fate modelling (described in Section 2.2.2.2), has been performed on the worst-case hydrocarbon release, which was determined to be a 40,000 L marine diesel oil (MDO) release as a result of a vessel collision (described in Section 2.2.2.2.3). The results have been used to inform the environment that may be affected (EMBA). The EMBA (Figure 2-1) encompasses the outer most boundary of the worst-case spatial extent. Figure 2-2 and Figure 2-3 provide a zoomed in view of the EMBA in the Victorian and Tasmanian waters.

The EMBA presented does not represent the predicted coverage of any one hydrocarbon spill or a depiction of a slick or plume at any point in time. Rather, the area is a composite of a large number of theoretical paths, integrated over the full duration of multiple spill simulations under various metocean conditions.

The terminology EMBA is also used in Section 6 to identify the extent of area potentially impacted by light and noise. The Light EMBA and Noise EMBA are determined based on the worst-case scenarios for the operational conditions posed.

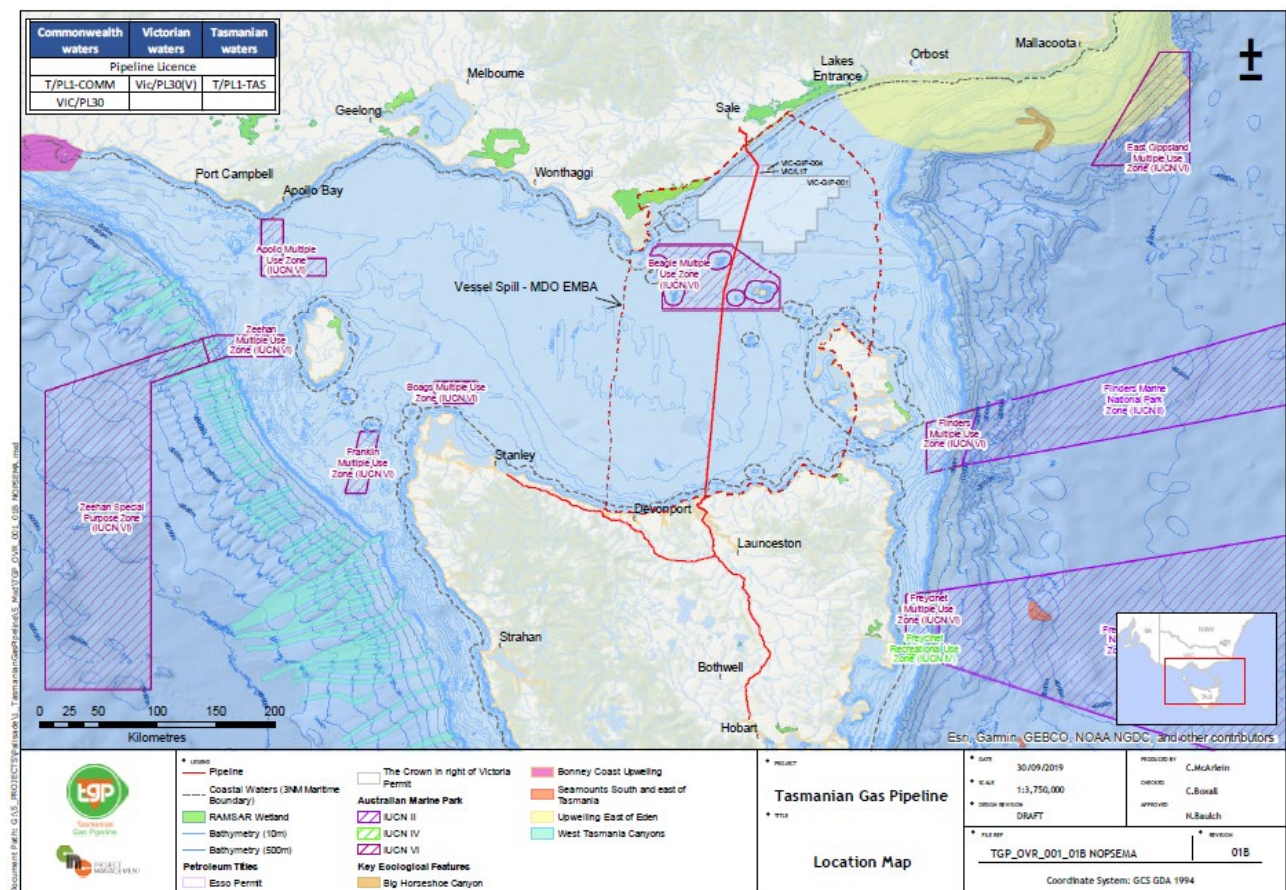


Figure 2-1: TGP Offshore Route Overview

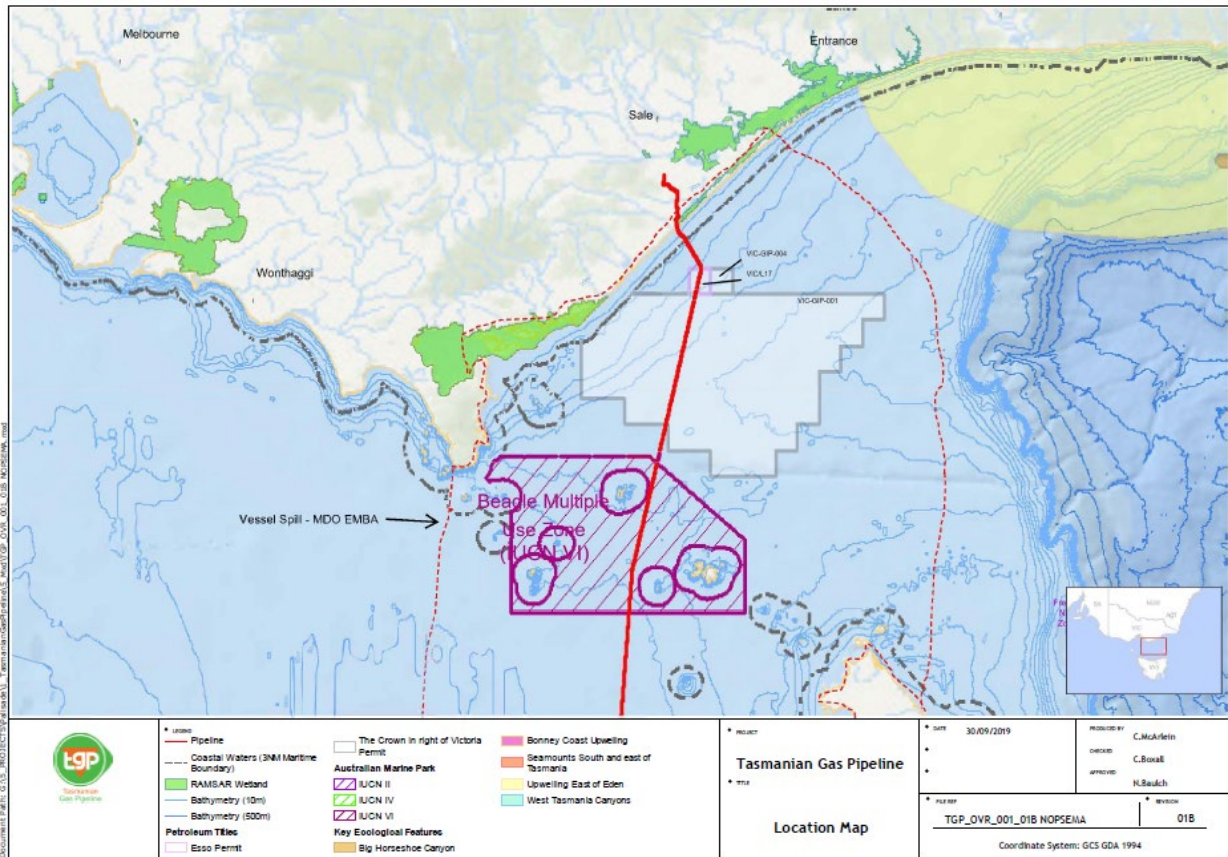


Figure 2-2: TGP Environment that May Be Affected (EMBA) – Victoria

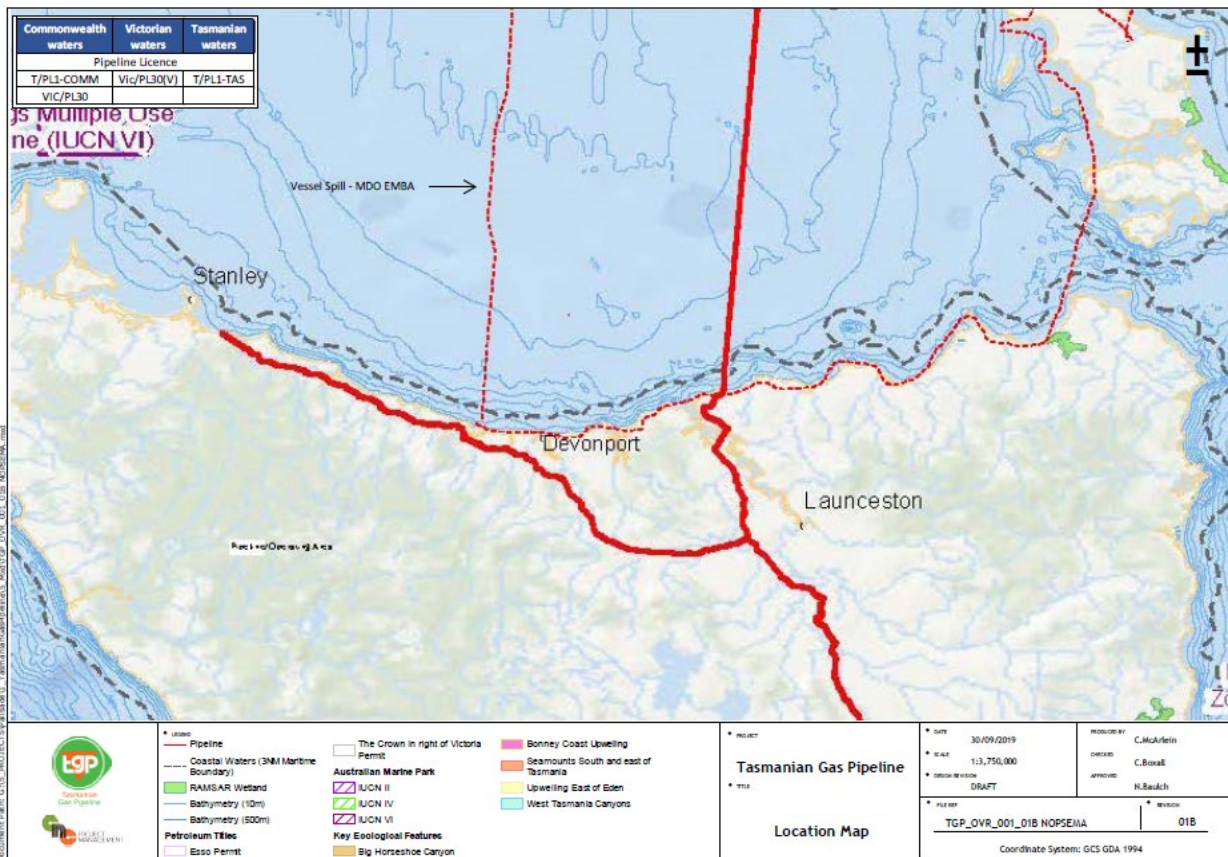


Figure 2-3: TGP Environment that May Be Affected (EMBA) - Tasmania

## 2.1.2 Subsea Pipeline Route and Activity Location

The TGP is a DN 350 (14 inch) pipeline with the key function of supplying sales quality natural gas from the LCS in Victoria, across the Bass Strait to Tasmania. The pipeline was commissioned in 2002 and has a capacity of 47 PJ per year.

The TGP offshore section commences at the high-water mark along Ninety Mile Beach, Seaspray and crosses Bass Strait to the low water mark at Five Mile Bluff, Tasmania where it continues onshore. The Offshore TGP is approximately 301 km in length, with maximum water depth along the route of approximately 77 metres (m). The TGP route is shown in Figure 2-1. The Offshore TGP route was selected to minimise pipeline length and avoid adverse seafloor conditions and on bottom obstructions, identified during the pre-construction survey.

There are two drilled crossings where the pipeline meets the Victorian and Tasmanian landfalls, which were constructed using horizontal directional drilling (HDD). The Victorian HDD section is 1080 m long, commencing at Kilometre Point (KP) – 0.265 and exiting the seabed at KP 0.815, at approximately 10 m water depth. The Victorian shore approach was trenched and backfilled naturally from KP 0.806 to KP 4.0, and the maximum depth of the trench is 0.6 m (Lowest Astronomical Tide (LAT)) to the top of the pipeline. The Tasmanian HDD section is some 859 m long, entering the seabed at KP 300.181 in 10.5 m (LAT) water depth. Delineation of the Victorian and Tasmanian state waters can be seen Figure 2-1

The rest of the offshore component of the TGP sits on the Bass Strait seabed. The seabed along the Offshore TGP route across Bass Strait is mostly flat and featureless with the steepest slopes occurring between KP 289 and KP 290, where the seabed rises approximately 14 m over 90 m (slope angle 9°). Many sections of the Offshore TGP have partially or fully self-buried over time.

Earth Resources Regulator is responsible for administering the EP in Victorian state waters, which stretch from the Victorian high tide mark out to 3nm (refer to Figure 2-1).

Mineral Resources Tasmania is responsible for administering the EP in Tasmanian state waters, which stretch from the Tasmanian high tide mark out to 3nm (refer to Figure 2-1).

NOPSEMA is responsible for administering the EP in commonwealth waters.

## 2.1.3 Key Coordinates and Interfaces

The Offshore TGP route co-ordinates (grid and geographic) are provided in Table 2-1. The route length is defined by KP. The pipeline route curves are defined by length Intersection Points (IP) and associated Tangent Points (TP).

**Table 2-1: TGP Offshore Route Co-ordinates (Grid and Geographic)**

| Feature             | KP     | WGS 84 (Zone 55) |               | AMG 66 (Zone 55) |               | Geographic WGS 84 |            |
|---------------------|--------|------------------|---------------|------------------|---------------|-------------------|------------|
|                     |        | Eastings (m)     | Northings (m) | Eastings (m)     | Northings (m) | Latitude          | Longitude  |
| <b>Victoria End</b> |        |                  |               |                  |               |                   |            |
| HDD Entry           | 21.647 | 517,842.2        | 5,753,741.4   | 517,730.0        | 5,753,558.0   | -38.125157        | 147.121525 |
| HDD Exit            | 22.735 | 518,167.2        | 5,752,703.4   | 518,055.0        | 5,752,520.0   | -38.222522        | 147.122873 |
| IP 1A               |        | 518,645.3        | 5,751,176.5   | 518,533.1        | 5,750,993.1   | -39.231473        | 147.124858 |
| IP 1B               |        | 520,368.0        | 5,749,364.1   | 520,255.8        | 5,749,180.7   | -38.241339        | 147.135978 |
| IP 1                |        | 526,271.2        | 5,738,832.4   | 526,159.0        | 5,738,649.0   | -38.295452        | 147.180459 |
| IP 2                |        | 502,979.2        | 5,631,602.4   | 502,867.0        | 5,631,419.0   | -39.275455        | 147.020468 |

| Feature             | KP      | WGS 84 (Zone 55) |               | AMG 66 (Zone 55) |               | Geographic WGS 84 |            |
|---------------------|---------|------------------|---------------|------------------|---------------|-------------------|------------|
|                     |         | Eastings (m)     | Northings (m) | Eastings (m)     | Northings (m) | Latitude          | Longitude  |
| IP 3                |         | 491,100.2        | 5,462,000.4   | 490,988.0        | 5,461,817.0   | -40.593526        | 146.533908 |
| IP 3A               |         | 491,244.7        | 5,460,138.7   | 491,132.5        | 5,459,955.3   | -41.003564        | 146.534517 |
| HDD Exit            | 322.344 | 491,082.2        | 5,458,505.2   | 490,970.0        | 5,458,321.8   | -41.012861        | 146.533813 |
| HDD Entry           | 323.303 | 490,997.1        | 5,457,650.4   | 490,884.9        | 5,457,467.0   | -41.015633        | 146.533444 |
| <b>Tasmania End</b> |         |                  |               |                  |               |                   |            |

### 2.1.4 Design and Operating Parameters

Made of carbon-manganese steel, the TGP has been designed and constructed in accordance with ASME B31.8: Gas Transmission and Distribution Piping Systems (1995 Edition) design code, applicable Australian Standards (e.g. AS 2885.2 Welding) and regulations of the Commonwealth, Victoria and Tasmania. Design parameters and operating conditions for the Offshore TGP are summarised in Table 2-2.

The Offshore TGP has been designed in accordance with a pipeline integrity study to ensure it can withstand conditions expected in Bass Strait, including currents, temperature, sedimentation, marine growth and seabed conditions. This is outlined in the TGP Design Basis Manual – Offshore Pipeline (TGP-698-DG-DN-003) and further details are also provided in the TGP Offshore Safety Case (TGP-698-SC-HSE-004).

The Offshore TGP has fully welded joints along its entire length and has no tees. As a result there are no flanges, with the exception of the HDD tie-in flanges offshore at the Victorian and Tasmanian ends.

The Offshore TGP is protected externally by a 0.4 mm fusion bonded epoxy anti-corrosion coating, with reported service life of more than 75 years (Metalife Solutions, 2022). In addition, the subsea section is further protected by a nominal 38 mm concrete weighted coating, which also serves to stabilise the pipe and act as an effective barrier between any third-party impacts and the pipe wall. The Offshore TGP also has a cathodic protection (CP) system comprising sacrificial aluminium anodes attached at approximately every 12 to 15 field joints (approximately every 180 m). Section 2.2.1.9 describes the activity further for maintenance of the replacement of anodes.

The Victorian and Tasmanian HDD sections are protected by 38 mm thick sacrificial anodes installed on every pipe joint through the bore hole. A galvanic anode CP system and onshore anode ground bed was installed on the Victorian HDD section during construction but was subsequently disconnected following commissioning of the pipeline.

**Table 2-2: TGP Design Parameters and Operating Conditions**

| Parameter                                    | Unit   | Value |
|--|--------|-------|
| Pipeline Length                              | km     | 301.6 |
| Size   | NB     | 350   |
| Outside Diameter                             | mm     | 355.6 |
| Pipe Wall Thickness                          | mm     | 11.1  |
| Wall Thickness (shore crossing) <sup>1</sup> | mm     | 12.7  |
| Grade  |        | X65   |
| Maximum Allowable Operating Pressure         | MPa(g) | 15.3  |
| Offshore Pipeline Average Design Temperature | °C     | 13    |

### 2.1.5 Pipeline Facilities and Features

The TGP route is shown in Figure 2-1. There are no permanent offshore facilities (platforms, mooring buoys, etc.) or equipment, machinery or instrumentation associated with the Offshore TGP. Ancillary facilities occur at the Victorian and Tasmanian ends beyond the offshore section of the TGP:

- Seaspray Main Line Valve (MLV) (Facility No 605) KP 21.40
- Five Mile Bluff MLV (Facility No 610) KP 323.025

A section of the Offshore TGP was trenched during the installation stage from the Victorian HDD exit point at KP 22.78 to approximately 11 m water depth at KP 25.988. The Tasmanian HDD exit point at KP 322.344 was not trenched due to hard rock. The trench on the Victorian side was not mechanically backfilled but left open to backfill naturally. To date, this is the only section of the Offshore TGP that is fully buried.

Since the pipeline was constructed, no additional property has been brought onto or left on the title areas covered by this EP.

#### 2.1.5.1 Decommissioning

No end-of-life or decommissioning activities are planned during the life of this EP. The offshore pipeline has a nominal 40-year design life, at the time of updating the EP the pipeline is approximately half-way into this design life. Pipeline activities may be extended subject to confirming the integrity of the pipeline.

Under Section 572(3) of the OPGGS Act, a titleholder must remove from the title area all structures that are, and all equipment and other property that is, neither used nor to be used in connection with the operations. Under Section 572(7) of the OPGGS Act, the property removal requirements under section 572(3) of the OPGGS Act have effect subject to any other provision of the OPGGS Act, the regulations, directions given by NOPSEMA or the responsible Commonwealth Minister, and any other law. Under section 270(3) of the OPGGS Act, before title surrender, all property brought into the surrender area must be removed to the satisfaction of NOPSEMA, or arrangements that are satisfactory to NOPSEMA must be made in relation to the property. Sections 572(7) and 270(3) of

<sup>1</sup> 12.7 mm wall thickness used for section of pipeline through the shore crossing and along the shore approach lengths to provide additional strength, wall thickness and stability.

the OPGGS Act provide scope for in-situ decommissioning and other arrangements to be made where it can be demonstrated that the risks and impacts are ALARP and acceptable as well as comply with all other Acts and legislation.

TGPPL acknowledge that the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cth) requires removal of all structures, equipment and other property no longer used for oil and gas operations unless an alternative decommissioning end state with an equal or better environmental outcome to full removal can be demonstrated and is approved by the regulator. Decommissioning planning will include a comprehensive Decommissioning Options Assessment process based on Multi-Criteria Decision Analysis (MCDA) to evaluate feasible pipeline end state options against relevant person informed criteria. In addition to the MCDA process, environmental risks and impacts associated with the decommissioning of the pipeline will be assessed to ensure they can be managed to ALARP and are of an acceptable level.

### 2.1.6 Gas Composition

The TGP transports sales quality Natural Gas from Longford in Victoria to Tasmania. TGP Natural Gas comprises largely methane (91.14%) and ethane (5.21%) and is dry and free from significant impurities under normal operating conditions. Other components include carbon dioxide (2.26%), nitrogen (0.74%), propane (0.5%) and minor quantities of oxygen, butane, pentane and hexane (in quantities less than 0.1%).

The sales gas complies with AS 4564:2020 General-purpose Natural Gas, which sets out the limits for Wobbe Index, oxygen, hydrogen sulphide, total sulphur, water content, hydrocarbon dew point and total inert gases.

Gas quality is continuously monitored by SCADA using gas chromatographs and moisture analysers to check that gas conforms to specifications set out in contracts with gas suppliers and shippers. Gas chromatographs and moisture analysers are validated continually using certified calibration gas. The gas measurement instruments are validated at regular intervals as determined by the pipeline engineers.

### 2.1.7 Third Party Infrastructure

The Offshore TGP route is adjacent and to the west of the Esso Australia Pty Ltd (EAPL) Perch and Dolphin pipeline easement. These are shown in Figure 2-1 and referenced. The TGP was designed to provide a minimum separation of 230 m between the Offshore TGP and the EAPL Perch and Dolphin pipelines. EAPL are in the process of submissions for their 'Plug & Abandonment' campaign for this pipeline and platforms (Esso Australia Resources Pty Ltd, 2024).

The Offshore TGP route is adjacent and to the east of the Basslink subsea 400 kV DC electricity Interconnector. The TGP design provided a minimum offshore separation between the Offshore TGP and the Basslink Interconnector of 3.262 km.

There is one foreign crossing of the Offshore TGP. The Indigo submarine cable is a fibre optic communication link between Sydney and Singapore via Perth and Jakarta and was laid in 2018 and completed in 2019. It crosses the TGP in a uraduct at S39 17.58661 E147 04.9635.

See in Figure 2-4 the following:

- [A]** Seaspray to Dolphin to Perch Gas Pipeline in stasis mode; Perch Title VIC/L17, Esso Australia Resources Pty Ltd; Woodside Energy (Bass Strait) Pty Ltd Titleholders.
- [B]** Seaspray to Dolphin to Perch Gas Pipeline in stasis mode; Dolphin Title VIC/L15 and Pipeline PCA-Shore300 Licence VIC/PL21, Esso Australia Resources Pty Ltd; Woodside Energy (Bass Strait) Pty Ltd Titleholders
- [C]** Indigo Central Cable, Subco

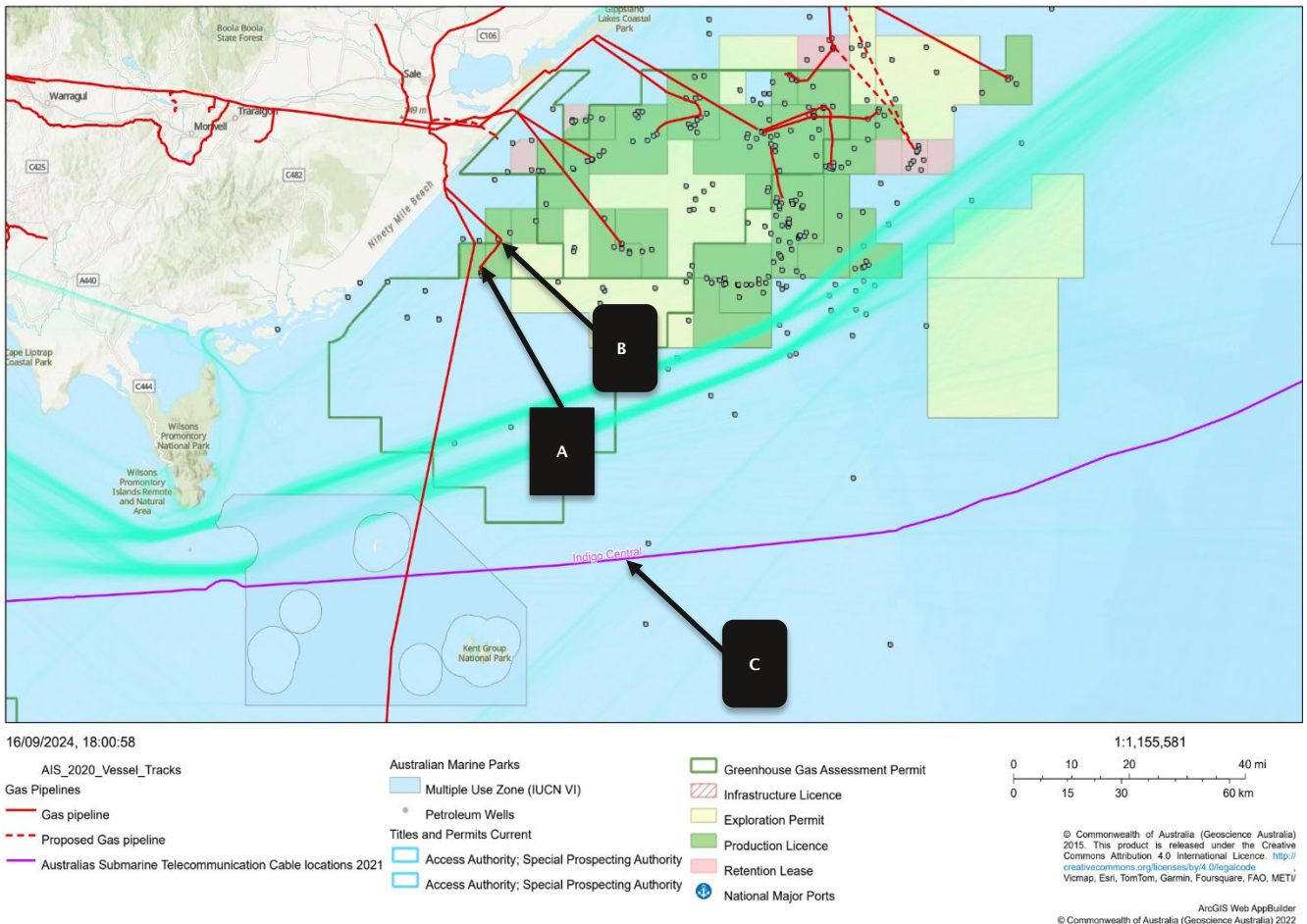


Figure 2-4: Third Party Infrastructure Mapped with TGP

## 2.2 Key Offshore Activities

The TGP is an operating pipeline transporting natural gas from Victoria to Tasmania and, therefore, there are no daily activities.

Surveys of the pipeline, to assess pipeline integrity and any maintenance requirements, are undertaken on a periodic basis and occur approximately every 5 years. Consequently, temporary facilities are only on location during subsea survey and emergency repair works if, and when, they arise.

The following sub-sections describe a list of current and potential activities associated with the Offshore TGP for the next 5-years considering both planned and unplanned events.

### 2.2.1 Planned Activities

Due to the nature of the pipeline, the activities on the pipeline are primarily survey and planned maintenance based. Field inspections and maintenance activities for the Offshore TGP are performed in accordance with the TGP *Offshore Operations and Maintenance Management Plan* (TGP-600-OM-MO-002). These activities include:

- 5-10 yearly periodic subsea surveys using crewed surface vessel with remotely operated vehicles (ROV), Uncrewed Surface Vessel (USV) with or without ROV. Future inspections may utilise Autonomous Underwater Vehicle (AUV) technology. Air Diver Inspections may be used to inspect flanges at the HDD exits.

- An intelligent pipeline pigging activity, whereby an electronically equipped device (pig) is inserted into the pipeline to detect metal loss in the pipeline wall. This activity is conducted solely from shore facilities with no impact on the offshore environment.
- Maintenance activities conducted on an as-needs basis following surveys or identified issues.

The TGP *Offshore Pipeline Operations and Maintenance Management Plan* (TGP-600-OM-MO-002) provides for a five-year rolling planned works program which is reviewed annually subject to risk assessment and evaluation of any integrity surveys conducted in the preceding year. This approach is further defined in the *Offshore Pipeline Integrity Management Plan* (TGP-698-PA-IP-002). A summary of the timings can be found in Section 2.2.1.9.

Major event driven surveys may be conducted in a similar fashion to the regular surveys to determine damage from physical impact or adverse weather and will be undertaken as required (refer to Section 2.2.1.9).

Inspections and maintenance activities are performed by specialist contractors that are contracted in accordance with TGPPL's contractor engagement process. Any inspection and maintenance work must be carried out in a manner that matches the performance outcomes and standards set down in this Offshore EP, roles and responsibilities are detailed in Section 8.3.

Offshore pipeline activities are discussed in detail in subsequent sections. Where the Offshore TGP joins the terrestrial component of the pipeline, operations and maintenance activities undertaken in the coastal areas are discussed in more detail in the TGP *Onshore Environment Management Plan* (TGP-698-PA-HSE-001).

#### 2.2.1.1 Operation of the Pipeline

The RMC monitors the pipeline 24 hours per day, 7 days per week, 365 days a year via the SCADA system. The team is responsible for standard operation of the pipeline and monitoring using the SCADA system and supporting emergency response.

The SCADA system monitors flow in the pipeline and provides information on, and remote management of, the CP system, pressures, temperatures, valve status, metering selections, alarms, gas quality, flow rates, condition monitoring and site entry monitoring. The status of the entire TGP system can be determined and operators can respond to changing conditions, faults and emergencies.

The SCADA system ensures that all relevant alarms and protective systems are in place so that pipeline integrity, and safety of personnel and the public, is not compromised and that security of supply is maintained. Remote shutdown, opening and closing of MLVs and other ancillary functions are all conducted from the RMC using SCADA. The SCADA system consists of redundant servers, and the system is connected to stations and facilities along the TGP via the data communication network.

Gas pressure in the TGP is monitored continuously from the RMC. In the event of detection of an unexpected pressure drop in the offshore section, this will be immediately escalated to the TGPPL engineering team for assessment. Where deemed appropriate, the affected pipeline section may be isolated by closure of the appropriate MLVs at Seaspray, Victoria and Five Mile Bluff in Tasmania.

Smoke, flame, and/or gas detection systems have been installed in onshore pipeline facility control huts and are also monitored by the RMC via SCADA. There are no offshore facilities and accordingly no smoke, flame and/or gas detection systems are installed on the Offshore TGP. The SCADA system provides real time flow and pressure data, which is modelled to enable abnormal operating conditions, pipeline leak, to be alarmed.

#### 2.2.1.2 Support Vessels

Maintenance and inspection of the Offshore TGP is undertaken with the aid of support vessels. Vessels are contracted from international or national suppliers, when required, and will vary depending on the proposed activity and vessel availability. Vessels supporting the TGP operations will be specified and operated in accordance with international and Australian regulatory requirements. The vessels will be subject to a marine assurance program and will be certified as

compliant with international maritime legislative requirements by a Classification Society registered with the International Association of Classification Societies (IACS).

Vessels range in weight (300 – 1500 tonnes (t) - gross tonnage) and fuel capacity (35 - 530 cubic metres (m<sup>3</sup>)). An example vessel, is the *Bhagwan Samson Explorer* (Figure 2-5) and the *Outer Limit* (refer to Figure 2-6). Specifications for the vessels, *Bhagwan Samson Explorer* and *Outer Limit* are provided in Table 2-3, as an example of the typical support vessels utilised by TGPPL.

Support vessels will primarily operate on dynamic positioning (DP) when performing activities at the worksite. However, vessels equipped with anchors may be deployed in an emergency. DP uses multiple sources of positioning data (i.e. satellite navigation and radio transponders) to maintain the position of the vessel at a required location.

All Support Vessels are required to undergo a pre-mobilisation inspection to confirm compliance with maritime legislation and TGPPL's safety and environment requirements. Vessels may mobilise from an Australian port or international waters, in accordance with biosecurity and marine assurance requirements.

Depending on inspection and maintenance activities required, vessels are at sea for 1 to 4 weeks. Given their greater fuel capacity, large vessels can remain at sea for these time periods, however, smaller vessels may require port visit to refuel or for maintenance. No vessel refuelling is undertaken at sea.

Vessels use global positioning system (GPS) coordinates to remain within the Offshore TGP route.



Figure 2-5: The "Bhagwan Samson Explorer" - typical vessel for pipeline surveys



Figure 2-6: The "Outer Limit" - typical vessel for pipeline surveys

Table 2-3: Indicative support vessel specifications

| Parameter               | Bhagwan Samson Explorer | Outer Limit       |
|-------------------------|-------------------------|-------------------|
| Draft (max)             | 2.5 m                   | 2.1 m             |
| Length                  | 34.95 m                 | 35 m              |
| Beam                    | 13.2 m                  | 11.5 m            |
| Total fuel volume       | 50 m <sup>3</sup>       | 37 m <sup>3</sup> |
| Class                   | 2B                      | 1B                |
| Berths (including crew) | 30                      | 32                |

### 2.2.1.3 Uncrewed Surface Vessels

USVs may also be used for inspection activities. These are smaller vessels, typically 5-15 m in length. They are a fully uncrewed ‘over the horizon’ operation using satellite communications. Each USV sends real time images and situational data to a control room where a team of qualified USV pilots keep watch and continuously control the vessel. All vessels have multiple redundant communication paths. An example of a USV is shown in Figure 2-7.

Given USVs are unable to support human occupancy, emissions and discharges are typically confined to cooling water and combustion of marine diesel. The vessel is equipped with a bilge monitoring system to monitor the bilge tanks for hydrocarbons. The probability of this occurring is low but could potentially arise from leaks from engine machinery spaces or from marine diesel tanks. In the event hydrocarbons are detected, the bilge pumps will be automatically disabled and the vessel returned to port. Underwater noise generated from an USV is considerably lower than traditional vessels due to their significantly smaller size and lower installed / thruster power requirements.

The USV may be equipped with MBES or ROV, with the ability to deploy and retrieve equipment from the seabed. Key parameters for a typical USV are shown in Table 2-4.

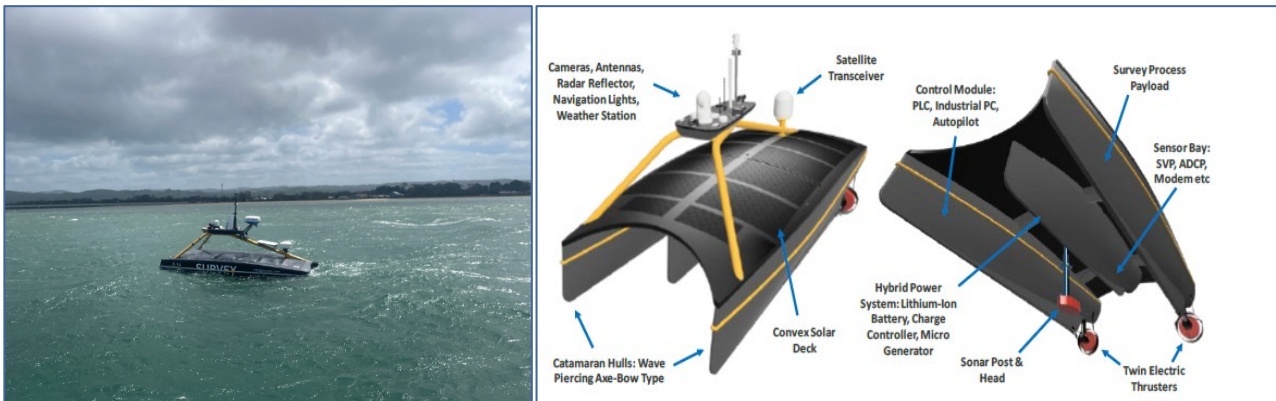


Figure 2-7: USV X-14 provided by Xoclean

Table 2-4: Indicative uncrewed surface vessel parameters

| Parameter                              | USV (based on X-14)       |
|--|---------------------------|
| Draft (max)                            | 2.2 m                     |
| Length                                 | 4.5 m                     |
| Weight                                 | 750 kg (+ 100 kg payload) |
| Propulsion system                      | Electric-diesel hybrid    |
| Total fuel volume                      | 3.3 m <sup>3</sup>        |
| Observation distance:                  |                           |
| - headland or large vessels            | 4 - 6 NM (7.4 - 11 km)    |
| - lateral mark                         | 0.5 NM (0.9 km)           |
| - marine debris, fishing gear, mammals | 200 - 400 m               |

### 2.2.1.4 Pipeline Inspections

As per the TGP *Offshore Pipeline Operations and Maintenance Management Plan* (TGP-600-OM-MO-002), maintenance activities include periodic inspections to provide assurance of the pipeline integrity. Specialised geophysical surveys are used to inspect the condition of the offshore component of the pipeline. Pipeline anomalies or span inconsistencies from as-laid data are identified in these operations, along with pipeline orientation and the condition of coatings, field joints and anodes.

Each survey will use offshore support vessels. Equipment used in the surveys includes ROV / AUV mounted cameras, single and multi-beam echo sounders or SSS (refer to Section 2.2.1.5 below). The vessel will also be equipped with deck handling facilities and survey positioning equipment.

Offshore vessels involved with Offshore TGP inspections have their own communications system for use between the vessel, land base and emergency services should they be required. The communication system is made available to visiting TGPPL personnel, visitors, representatives, consultants, etc. at all times during the surveys and in emergency situations.

Inspection of the Offshore TGP is normally scheduled once every 5 years (unless a risk assessment or unplanned event triggers a survey). TGPPL are continuously reviewing the risk profile of the asset using a risk-based inspection (RBI) approach to future surveys, with a view to extending the inspection intervals out to possibly every 7 years. The last full-length inspection of the Offshore TGP was completed in November 2024. The next inspection is targeted in late 2029. The duration of each survey ranges between 1 to 4 weeks. Surveys are not expected to exceed 4 weeks.

### 2.2.1.5 Side Scan Sonar (SSS) & Multibeam Echo (MBES) or other Digital Capture

SSS is a hydro-acoustic technique that involves towing a torpedo shaped ‘towfish’ (see Figure 2-8 (EdgeTech, 2024)) behind the survey vessel. The tows are typically conducted at 3 to 5 knots with a maximum swath width of 150 m per side depending on resolution and water depth. The towfish is normally located about 10-15 m above the seabed and at an approximate distance of 150-200 m behind the vessel. There are no fluids contained within the towfish. Where there is future scope for these devices to become autonomous, TGPPL will investigate, and risk assess the benefits of utilising tow-free SSS device technology to reduce need for crewed survey vessels to perform this activity. At present the use of AUV SSS requires significant training of personnel and significant costs, Table 2-5 outlines the difference between towed and non-towed SSS.



**Figure 2-8: An example ‘towfish’ retailed for Offshore Oil & Gas Pipeline route surveys**

**Table 2-5: Advantages and Disadvantages between Different Side Scan Sonar System Deployments (Black Laser Learning, 2018)**

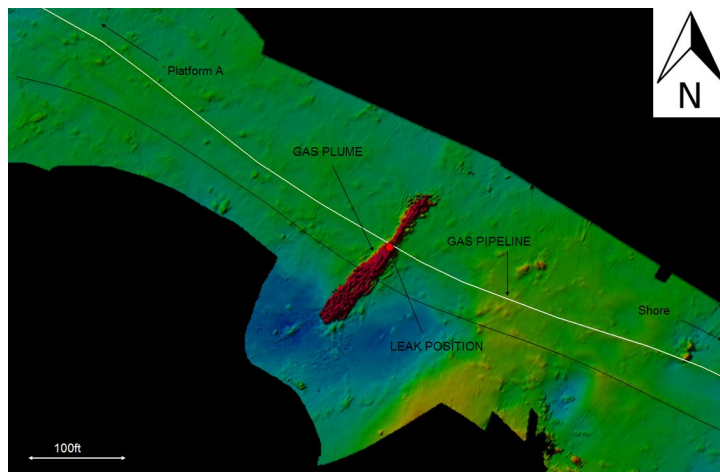
| Parameter                        | Towed Side Scan Sonar   | AUV Side Scan Sonar  |
|----------------------------------|---|--|
| Operational depth (m)            | Unlimited with sufficient cable   | Unlimited with depth applicable pressure housing and peripherals |
| Acoustic shadow                  | Pronounced with proper towfish height   | Pronounced   |
| Surface motion                   | Susceptible   | None   |
| Ease of deployment and operation | Moderate  | Complex  |
| Boat driver skill level          | High  | None   |
| Potential loss of unit           | Moderate  | High   |
| Vessel requirements              | Small to large, dependent upon cable length and use of splash-proof computer system | Small to large, vehicle size dependent                           |

| Parameter             | Towed Side Scan Sonar | AUV Side Scan Sonar   |
|-----------------------|-----------------------|-----------------------|
| Post mission analysis | Professional software | Professional software |
| Training required     | Moderate              | Significant           |
| Cost                  | Moderate              | Significant           |

These surveys do not use airguns and are considered less intrusive than surveys for oil exploration where air gun penetration is expected to be in the range of 3 to 4 km. Systems used in the geophysical surveys of the Offshore TGP typically penetrate the seabed only to 10 m and the source noise level of sub-bottom profile equipment is approximately 170-230 dB re 1µPa@1 m.

The SSS survey is conducted over the majority of the Offshore TGP length (excluding inshore portions) and is used to: determine if the pipeline has moved; identify any objects that may have impacted the pipeline; and identify any spans that exceed the maximum allowable length. Information gathered during the SSS survey is used to plan and determine if further visual inspection or intervention is required.

MBES is also commonly used by TGPPL for inspection of the TGP, the echo sounder determines the distance between the survey vessel and seabed at any given instance, using GPS location to map the data. The technology works on the principle that water is an excellent medium to transmit sound waves, they are sent from a transmitter as a pulse that then bounces or reflects from the seabed or other features, such as a pipeline, then returns as an echo to the receiver (All about Pipelines, 2024). The technology has also been used to help identify gas leaks which can be seen in Figure 2-9 (R2 Sonic, 2024).



**Figure 2-9: MBES image results for proving a gas leak**

Other scanning technology emerging in the market will be considered by TGPPL, particularly where they present opportunity to reduce environmental impacts, particularly with respect to reducing environmental noise impacts and reducing potential marine pollution through reduced vessel size and crewing requirements. In addition to this, utilising emerging tracking of cetaceans to support spotting and understanding of migration and population movements is something that is of interest to support operating acoustic equipment with minimal impact to the noise sensitive populations. An example of this emerging information is the partnership of Google Australia and Griffith University using AI and hydrophones to automatically detect certain sounds and monitor and track humpback whale migration, patterns, and other behaviours (Rosengreen, 2024).

### 2.2.1.6 Remotely Operated Vehicle (ROV) / Autonomous Underwater Vehicle (AUV) Survey

Where required, visual inspections of sections of the Offshore TGP identified during the SSS or MBES surveys, undertaken using a ROV or AUV. This allows additional information to be gathered including confirmation of the pipe stability and weight coating integrity, confirmation of any locations where the approved free span lengths are exceeded, and checks for external damage, debris and marine growth.

ROVs / AUVs are also used to inspect the CP system and may use probes to determine electrical potential differences at fixed points. Sacrificial anodes, placed about every 180 m along the Offshore TGP, are also inspected as are field joint coatings applied in the gaps of concrete between individual pipe joints. These surveys will include the inspection of as many anodes as possible, with estimates of the amount of anode depletion and the collection of potential readings, to identify any areas of the Offshore TGP that may be susceptible to external corrosion.

ROV surveys are undertaken in line with the IMCA R004 February 2024 Rev. 6 - Code of practice for the safe and efficient operation of remotely operated vehicles. ROVs are generally mounted with a camera in pressure proof housing and may have robotic arms to allow completion of small tasks. Small amounts of hydraulic oil may therefore be present. A cable connects the ROV / AUV to the surface and the image of the seabed can be viewed and recorded on the vessel. Coordinates are recorded via GPS to have an automated permanent record of the location of the camera drop or tow. Where spans are confirmed to be beyond the maximum allowable limit, maintenance works will be undertaken on the same voyage to correct the deficiency (refer to Section 2.2.1.9).

The Victorian and Tasmanian HDD exit points are inspected for scouring and/or free span development in accordance with the TGP *Offshore Pipeline Operation and Maintenance Management Plan* (TGP-600-OM-MO-002) through ROV/AUV or diver survey and complemented by hydrographic surveys as required to cover possible backfilled trench areas. Should excessive free spanning at the HDD exits be detected, the severity of the span shall be assessed. The method and timing of any span rectification work deemed necessary shall be determined based on an engineering and risk assessment of the survey results.

#### 2.2.1.7 Diver Inspections

The tie-in flanges at the HDD sections of the Offshore TGP lie in relatively shallow water and it was anticipated that the flanges would be inspected manually using divers. However, during the 2013 ROV survey, the ROV unit was able to inspect the tie-in flanges to such an extent that the need for diving operations is no longer required for this inspection work.

Diver inspections are not normally carried out during the major surveys. However, in the event of extreme damage, if metrology is required, or for repair/maintenance work, divers may be employed to both inspect and accurately map the pipeline in the relevant area.

For further details of diving operations, refer to the *TGP Offshore Safety Case* (TGP-698-RP-AU-003).

#### 2.2.1.8 Internal Inspections (Pigging)

Pigs are devices inserted into the pipeline using 'pig traps' (launchers) that are fitted with doors (closures). Pigs enter the pipeline via a launcher and exit via a receiver, both of which are onshore devices. When inserted, pigs travel throughout the length of a pipeline driven by the gas flow.

There are two types of pigs which perform different maintenance functions:

- Utility pigs - are used to perform functions such as cleaning or sealing a pipeline; and
- Intelligent ('smart') pigs - provide information on the internal condition of the pipeline, as well as locating problem areas

The frequency of pipeline pigging using utility pigs is determined based on operational history and the annual integrity risk assessment and review. Cleaning pig runs are scheduled in accordance with the annual *Onshore Asset Management Plan*. The timing of subsequent cleaning pig runs will be determined subject to pig retrieval and inspection of the nature and amount of debris collected.

Intelligent pigging is also included as part of the TGP inspection and maintenance programme. A planned intelligent pigging run has been included in the *Offshore Pipeline Operations and Maintenance Management Plan* (TGP-600-OM-MO-002) every 10 years, following the successful initial run performed in 2010. The frequency is reviewed every year as part of the annual integrity risk review. As at the submission of this EP, the last inspection was completed in February 2021, with the next routine intelligent pigging run scheduled for 2031, however, the requirement for an intelligent pigging inspection outside the nominal 10 yearly schedule may be triggered by the following events:

- Integrity monitoring data indicates that there is a concern with respect to the long-term integrity of the pipeline; or
- A direct event occurs that may have compromised the integrity of the pipeline.

There are no offshore environmental impacts or risks arising from internal inspections of the pipeline.

### 2.2.1.9 Maintenance Activities

Maintenance work to repair potential or existing damage consists of specific tasks required to rectify deficiencies found during Offshore TGP inspections, and their frequency will therefore depend on the results of the inspection surveys. It is anticipated that maintenance activities could comprise the following:

- Rectification of unsupported pipeline spans that are greater than the maximum allowable span, to ensure compliance with the allowable design length and reduce the likelihood of vortex induced vibrations (VIV). Span correction generally involves the installation of supports, in the form of grout-filled bags, underneath the centre of the span (jetting to remove high points is considered unlikely once the pipeline has been laid). Each bag, with dimensions of about 1800 mm × 1200 mm, is placed under the subsea pipeline using a ROV and inflated with grout (concrete) via a hose connection to the support vessel. Each operation is monitored by the ROV to ensure smooth operation.
- Removal of dropped objects (such as containers) from passing vessels (including survey vessels) that may settle on or near the Offshore TGP is a conceivable requirement and, depending on the object, is likely to be achieved with the assistance of a ROV (objects of up to 300 kg in weight can be removed by ROV).
- Repair of concrete coating which, depending on the severity, may simply involve placing a concrete mattress over the damaged area to prevent possible damage to the subsea pipeline from further impacts. Concrete itself is considered environmentally benign and the mattress installation is undertaken in accordance with IMCA D042, R016 2011 - Diver and ROV Based Concrete Mattress Handling, Deployment, Installation, Repositioning and Decommissioning. Concrete mattresses, of dimensions 150 mm x 2.2 m x 5 m, will be lowered onto the subsea pipeline via a specialised crane on-board support vessel (maximum on-board weight of 3.5 t). Final placement is assisted using ROVs and/or divers.
- Replacement of sacrificial anodes (possibly expected during the design life). This will be undertaken using an ROV, which will remove and replace the anode (attached via a bracket).
- Removal of marine growth from the subsea pipeline is not expected to be required over the life of the pipeline.

## 2.2.1.10 Summary of Planned Activities

**Table 2-6: Summary of Planned Activities for TGP Operations and Maintenance**

| Activity                  | 2025-30 Operation              |  |
|---------------------------|--------------------------------|--|
|                           | Planned Activity               |  |
| Operation of the Pipeline | <b>Description</b>             | RMC monitors via SCADA system, alerts operators of any change in pipeline operating conditions.  |
|                           | <b>Purpose</b>                 | Monitor flow, collect information/data, remote management of system, condition monitoring and site monitoring. Respond to changes in process conditions as required. Responsible for supporting emergency response. Monitoring of smoke, gas and flame detection systems of remote onshore facilities.   |
|                           | <b>Frequency</b>               | Daily  |
|                           | <b>Duration</b>                | 24 hours   |
|                           | <b>Time of Year</b>            | All year   |
|                           | <b>Persons conducting work</b> | Contracted   |
|                           | <b>Support Vessel (Type)</b>   | N/A  |
|                           | <b>Supporting Documents</b>    | N/A  |
| Pipeline Inspections      | <b>Description</b>             | Specialised geophysical surveys are used to inspect the condition of the offshore component of the pipeline. Pipeline anomalies or span inconsistencies from as-laid data are identified in these operations, along with pipeline orientation and the condition of coatings, field joints and anodes.  |
|                           | <b>Purpose</b>                 | Periodic inspections provide assurance of the pipeline integrity. Trigger maintenance from inspection results.   |
|                           | <b>Frequency</b>               | 5 yearly (unless risk assessment or unplanned event triggers)  |
|                           | <b>Duration</b>                | 1-4 weeks depending on inspection.   |
|                           | <b>Location</b>                | May occur in State or Commonwealth waters  |
|                           | <b>Time of Year</b>            | All year, but predominantly December to April  |
|                           | <b>Persons conducting work</b> | Contracted   |
|                           | <b>Support Vessel (Type)</b>   | Y, Vessels range in weight (300 – 1500 tonnes (t) - gross tonnage) and fuel capacity (35 - 530 cubic metres (m <sup>3</sup> )). Additional survey vessels: SSS or ROV / AUV, USV   |
|                           | <b>Supporting Documents</b>    | Offshore Pipeline Operations and Maintenance Management Plan (TGP-600-OM-MO-002), Offshore Pipeline Integrity Management Plan (TGP-698-PA-IP-002).   |
| Side Scan Sonar (SSS)     | <b>Description</b>             | SSS is a hydro-acoustic technique that involves towing a torpedo shaped 'towfish' behind the survey vessel. The tows are typically conducted at 3 to 5 knots with a maximum swath width of 150 m per side depending on resolution and water depth. The towfish is normally located about 10-15 m above the seabed and at an approximate distance of 150-200 m behind the vessel. |
|                           | <b>Purpose</b>                 | Used to determine if the pipeline has moved; identify any objects that may have impacted the pipeline; and identify any spans that exceed the maximum allowable length. Information gathered during the SSS survey is used to plan and determine the visual inspection requirements of the subsequent ROV / AUV survey.  |
|                           | <b>Frequency</b>               | 5 yearly (unless risk assessment or unplanned event triggers)  |
|                           | <b>Duration</b>                | Dependant on scope   |
|                           | <b>Location</b>                | May occur in State or Commonwealth waters  |
|                           | <b>Time of Year</b>            | All year   |
|                           | <b>Support Vessel (Type)</b>   | Y, Vessels range in weight (300 – 1500 tonnes (t) - gross tonnage) and fuel capacity (35 - 530 cubic metres (m <sup>3</sup> ))   |

| Activity   | 2025-30 Operation  |  |
|--|--|--|
| Remotely Operated Vehicle (ROV) / Autonomous Underwater Vehicle (AUV) Survey | <b>Helicopter (Y/N)</b>  | N, unless specified through assessment for Cetacean monitoring   |
|  | <b>Supporting Documents</b>  | N/A  |
|  | <b>Description</b>   | Visual inspections of sections of the Offshore TGP identified during the SSS surveys are undertaken using a ROV or AUV. ROVs / AUVs are also used to inspect the CP system and may use probes to determine electrical potential differences at fixed points. Sacrificial anodes, placed about every 180 m along the Offshore TGP, are also inspected as are field joint coatings applied in the gaps of concrete between individual pipe joints. |
|  | <b>Purpose</b>   | Confirmation of the pipe stability and weight coating integrity, confirmation of any locations where the approved free span lengths are exceeded, and checks for external damage, debris and marine growth. Estimates of the amount of anode depletion and the collection of potential readings, to identify any areas of the Offshore TGP that may be susceptible to external corrosion.  |
|  | <b>Frequency</b>   | 5 yearly (unless risk assessment or unplanned event triggers)  |
|  | <b>Duration</b>  | Dependant on scope   |
|  | <b>Location</b>  | May occur in State or Commonwealth waters  |
|  | <b>Time of Year</b>  | All year   |
|  | <b>Persons conducting work</b>   | Contracted   |
|  | <b>Support Vessel (Type)</b>   | Y, Vessels range in weight (300 – 1500 tonnes (t) - gross tonnage) and fuel capacity (35 - 530 cubic metres (m <sup>3</sup> ))   |
| Diver Inspections  | <b>Helicopter (Y/N)</b>  | N, unless specified through assessment for Cetacean monitoring   |
|  | <b>Supporting Documents</b>  | N/A  |
|  | <b>Description</b>   | Diver inspections are not normally carried out during the major survey but can be used in the event of extreme damage, if metrology is required or for repair work.  |
|  | <b>Purpose</b>   | In the event of extreme damage, if metrology is required, or for repair / maintenance work, divers may be employed to both inspect and accurately map the pipeline in the relevant area.   |
|  | <b>Frequency</b>   | As required.   |
|  | <b>Duration</b>  | Dependant on scope   |
|  | <b>Location</b>  | May occur in State or Commonwealth waters  |
|  | <b>Time of Year</b>  | All year   |
|  | <b>Persons conducting work</b>   | Contracted   |
| <b>Support Vessel (Type)</b>   | Y, Vessels range in weight (300 – 1500 tonnes (t) - gross tonnage) and fuel capacity (35 - 530 cubic metres (m <sup>3</sup> )) |  |
| Internal Inspection  | <b>Helicopter (Y/N)</b>  | N, unless specified through assessment for Cetacean monitoring   |
|  | <b>Supporting Documents</b>  | TGP Offshore Safety Case (TGP-698-RP-AU-003)   |
| Internal Inspection  | <b>Description</b>   | Pigs are devices inserted into the pipeline using 'pig traps' (launchers) that are fitted with doors (closures). Pigs enter the pipeline via a launcher and exit via a receiver, both of which are onshore devices. When inserted, pigs travel throughout the length of a pipeline driven by the gas flow.   |
|  | <b>Purpose</b>   | There are two types of pigs which perform different maintenance functions: <ul style="list-style-type: none"> <li>• Utility pigs - are used to perform functions such as cleaning or sealing a pipeline; and</li> <li>• Intelligent ('smart') pigs - provide information on the internal condition of the pipeline, as well as locating problem areas</li> </ul>   |

| Activity                    | 2025-30 Operation  |   |
|-----------------------------|--|---|
|                             | <b>Frequency</b>   | Determined based on operational history and the annual integrity risk assessment and review. Cleaning pig runs are scheduled in accordance with the annual Onshore Asset Management Plan. The timing of subsequent cleaning pig runs will be determined subject to pig retrieval and inspection of the nature and amount of debris collected. Intelligent pigging occurs approximately every 10 years unless triggered by: <ol style="list-style-type: none"> <li>1) Integrity monitoring data indicates that there is a concern with respect to the long-term integrity of the pipeline; or</li> <li>2) A direct event occurs that may have compromised the integrity of the pipeline</li> </ol> |
|                             | <b>Duration</b>  | Dependant on scope  |
|                             | <b>Location</b>  | Both State and Commonwealth waters  |
|                             | <b>Time of Year</b>  | All year  |
|                             | <b>Persons conducting work</b>   | Contracted  |
|                             | <b>Support Vessel (Type)</b>   | N/A   |
|                             | <b>Helicopter (Y/N)</b>  | N   |
|                             | <b>Supporting Documents</b>  | Offshore Pipeline Operations and Maintenance Management Plan (TGP-600-OM-MO-002)  |
| Maintenance Activities      | <b>Description</b>   | Maintenance work to repair potential or existing damage consists of specific tasks required to rectify deficiencies found during Offshore TGP inspections. This includes, rectification of unsupported pipeline spans that do not meet requirements (using ROV), removal of dropped objects from passing vessels (generally ROV used), repair of concrete coating (ROV/divers support), and replacement of sacrificial anodes (using ROV)   |
|                             | <b>Purpose</b>   | Repair damage or remove environmental impacts to TGPPL assets and surrounding environment.  |
|                             | <b>Frequency</b>   | As required.  |
|                             | <b>Duration</b>  | 1-4 weeks depending on work.  |
|                             | <b>Location</b>  | May occur in State or Commonwealth waters   |
|                             | <b>Time of Year</b>  | All year  |
|                             | <b>Persons conducting work</b>   | Contracted  |
|                             | <b>Support Vessel (Type)</b>   | Y, Vessels range in weight (300 – 1500 tonnes (t) - gross tonnage) and fuel capacity (35 - 530 cubic metres (m <sup>3</sup> )), ROV / AUV   |
|                             | <b>Helicopter (Y/N)</b>  | N, unless specified through assessment for Cetacean monitoring  |
| <b>Supporting Documents</b> | Offshore Pipeline Operations and Maintenance Management Plan (TGP-600-OM-MO-002) |   |

## 2.2.2 Unplanned Activities / Events

Unplanned events or emergencies identified through risk assessment for the Offshore TGP are:

- Leaks from / ruptures of the pipeline leading to loss of containment (LOC)
- Incidents on board the offshore inspection/maintenance support vessel(s) resulting in a spill of fuel, chemicals or other contaminants

### 2.2.2.1 Gas Escape

Major LOC from the Offshore TGP would result in a significant pressure drop, which would be identified via the SCADA system. Major surveys may result when significant pressure drops are identified in the pipeline via the SCADA system.

In the event of detection of pressure drop, the RMC will immediately contact TGPPL engineering to seek further advice. The offshore TGP may be isolated by closure of the onshore MLVs at Seaspray and Five Mile Bluff, limiting the volume of gas released. Following isolation of the Offshore TGP inventory, the TGP Offshore emergency procedures would be implemented and the inventory of gas

blowdown in a controlled manner through the onshore MLVs. TGPPL would then implement procedures to repair the damaged section of subsea pipeline as soon as possible.

Due to the depth of the subsea pipeline, any gas release is most likely to be gradual and evidenced by bubbles rising to the surface. Any explosive rupture would be buffered by the density of the water and would only affect the immediate vicinity of the pipeline. Impacts would therefore depend on the depth at which the failure occurred. The pipeline however has been specifically designed (material, wall thickness and concrete coating) to resist all perceived risks such as penetration from anchors, dropped cargo or sunken vessels.

Maintenance of pipeline integrity is specifically addressed in a pipeline integrity management plan and risks associated with a breach in Offshore TGP integrity are covered in the *TGP Offshore Safety Case* (TGP-698-SC-HSE-004).

Modelling of a potential leak of gas resulting from a breach of the Offshore TGP was undertaken to determine the area that may be impacted. The potential gas leak scenarios modelled ranged from a hole of 5 mm to a full-bore rupture (Cardno, 2013).

Due to its low molecular weight, any gas escape from the Offshore TGP is expected to rise rapidly through the water column to the sea surface where it will dissipate to atmosphere. For the purposes of the model, it was assumed that gas will rise from the seabed as bubbles and reach the sea surface in an area represented by a circle with a radius dependent on the water depth and the rate of leakage. With this initial source on the surface, standard atmospheric dispersion was used to compute the gas concentration in the atmosphere as a function of the distance downwind (Cardno, 2013).

Results of the modelling indicated that:

- Concentration of gas in the plume above the sea surface will drop rapidly to below the Lower Explosive Limit (LEL) within 5 km of the source
- Sea level gas concentrations are very much lower and due to the plume rise, are well below the required limit beyond about 100 m from the source

The environmental impacts of a gas leak would largely be due to its physical presence as it passes through the water column and into the atmosphere. Some of this gas may dissolve in the water column but is not generally considered harmful to aquatic organisms, is inherently biodegradable and potential to bioaccumulate is low (ExxonMobil, 2024). The main potential impacts are only likely to occur from the extreme cases of explosion, flammability or asphyxiation where it may accumulate in sufficient quantities. The open environment of the Offshore TGP is extremely unlikely to lead to this condition.

Potential exposure of marine fauna to gas hydrocarbons from a subsea pipeline rupture would require the coincident occurrence of fauna, such as marine mammals or birds, within the area of a recent leak.

In the open water offshore environment, the nearest land mass is located 7 km from the Offshore TGP and is unlikely to be impacted by gas escape from a subsea pipeline rupture.

For a gas leak in a nearshore environment, adverse effects could involve potential hazards associated with concentration of gas in air near the LEL, however atmospheric conditions prevailing at the time, and presence of ignition sources, will determine if there is any impact to the environment.

#### 2.2.2.2 Hydrocarbon Spills

The TGP is licensed to carry dry natural gas only (i.e. it contains no liquid hydrocarbons or contaminating compounds) and, therefore, a leak from the Offshore TGP, regardless of size, is not considered a credible source of liquid hydrocarbon spills. As such, maintenance and inspection activities undertaken by third party vessels as part of Offshore TGP operations are deemed the only credible source of liquid hydrocarbon spills.

The types of hydrocarbons used during inspection and maintenance activities include:

- Hydraulic fluids used within inspection equipment (ROVs / AUVs)
- Fuel used to power inspection and maintenance vessels

Spills contained within the confines of the vessel are dealt with under the vessel Shipboard Oil Pollution Emergency Plan (SOPEP) and so are not discussed further within this document.

As no operational chemicals are required on the vessels and no refuelling shall occur at sea, the most credible sources of a hydrocarbon spill were identified as:

- Spills or leaks of hydraulic oil from the ROV / AUV
- Breach of a fuel tank on the survey vessel either resulting from a collision or grounding (for example during extreme weather events)

#### 2.2.2.2.1. Hydraulic Oil Spill

Due to the size of the equipment used, the maximum volume of any potential spill of hydraulic oil from ROVs / AUVs will be 100 L.

Hydraulic oils utilised in the ROVs/AUVs are environmentally friendly, low ecotoxicity oils, which will breakdown rapidly and pose minimal risk to the marine environment. In addition, ROVs / AUVs are generally only utilized in open sea environments where a spill of this magnitude is likely to quickly disperse. Refer to Section 6.10 for more information on the control measures.

#### 2.2.2.2.2. Fuel Spill

Marine Diesel Oil (MDO), or Marine Gas Oil (MGO), fuel will be used to power survey vessels. This may be procured from a range of suppliers.

Diesel oils are generally considered to be low viscosity, non-persistent oils, which are readily degraded by naturally occurring microbes. Diesel oils are considered to have a higher aquatic toxicity in comparison to many other crude oils due to the types of hydrocarbons present and their bioavailability. They also have a high potential to bio-accumulate in organisms.

MDO is a medium-grade oil (classified as a Group II oil) used in the maritime industry. It has a low density, a low pour point and a low dynamic viscosity (Table 2-7), indicating that this oil will spread quickly when spilled at sea and thin out to low thicknesses, increasing the rate of evaporation.

Due to its chemical composition, approximately 40% will generally evaporate within the first day, with the remaining volatiles evaporating over 3-4 days depending upon the prevailing conditions. Diesel shows a strong tendency to entrain into the upper water column in the presence of moderate winds and breaking waves (>12 knots) but floats to the surface when conditions are calm, which delays the evaporation process. Table 2-8 shows the boiling point ranges for the diesel used in the ADIOS II spill modelling.

**Table 2-7: Physical Characteristics of MDO**

| Parameter                      | Characteristic       |
|--------------------------------|----------------------|
| Density (kg/m <sup>3</sup> )   | 829 @ 15°C           |
| API                            | 37.6                 |
| Dynamic viscosity (cP)         | 4.0 @ 25°C           |
| Pour point (°C)                | -14                  |
| Oil category                   | Group II             |
| Oil persistence classification | Light-persistent oil |

**Table 2-8: Boiling Point Ranges of MDO**

| Characteristic     | Volatiles (%)  | Semi-volatiles (%) | Low volatiles (%) | Residual (%) |
|--------------------|----------------|--------------------|-------------------|--------------|
| Boiling Point (°C) | <180           | 180 - 265          | 265 - 380         | >380         |
| MDO                | 6.0            | 34.6               | 54.4              | 5            |
|                    | Non-persistent |                    |                   | Persistent   |

The environmental impact associated with an MDO spill is likely to be less severe than that of Marine Fuel Oil (and MGO less again) due to the lower molecular weight of the hydrocarbon fractions and lower viscosity, this makes them readily disperse in the conditions experienced across the Bass Strait, compared with low wind and sheltered waterbodies where the diesel slick may be more persistent (NOAA, 2023).

The environmental impacts of a hydrocarbon spill are largely due to the toxicity of the fuel (generally due to the aromatic components) and its physical persistence as layer or emulsion. For a fuel spill in an offshore environment, adverse effects would primarily involve acute toxicity related to aromatic hydrocarbon exposure in “fresh” fuel. Potential exposure of marine fauna to spilled hydrocarbons would require the coincident occurrence of fauna, such as marine mammals or birds, within the area of a recent spill. As such, the potential for damage would be limited to the few hours immediately following a spill before the aromatic components evaporate. In the high energy environment of Bass Strait, aromatic compounds will evaporate and disperse quickly.

For a fuel spill in a nearshore environment, adverse effects could involve acute toxicity related to aromatic hydrocarbon exposure in “fresh” fuel as well as the potential physical effects associated with “oiling” of habitat or organisms (a detailed evaluation of potential impacts is provided in Section 6.10.2).

#### 2.2.2.2.3. Fuel Spill Modelling Results

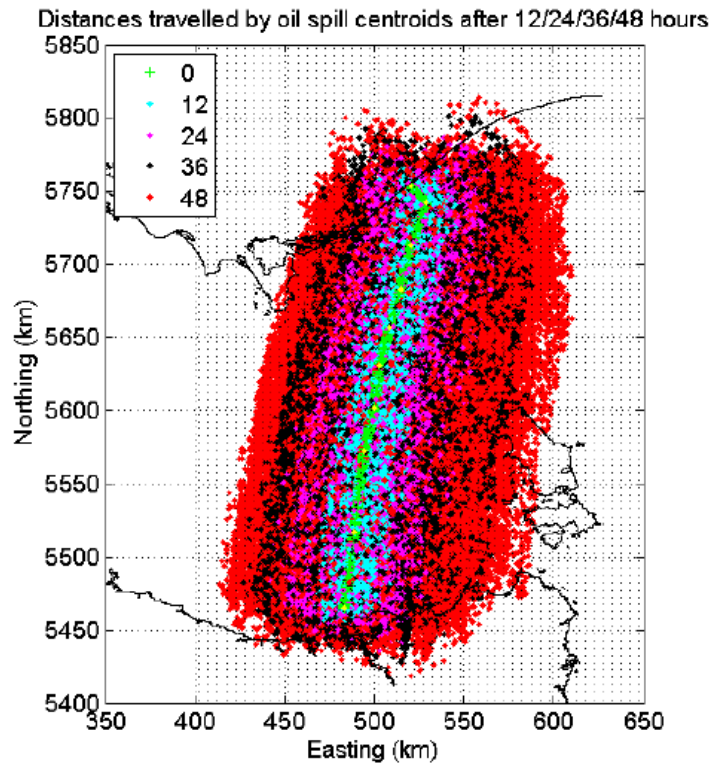
The maximum credible fuel spill volume associated with Offshore TGP inspection and maintenance activities is 40,000 L, being the maximum capacity of one fuel tank of the largest expected vessel (AMSA, 2012). Oil spill trajectory modelling with a spill volume of 40,000 L of fuel oil was undertaken to determine the areas that could potentially be impacted by a spill of fuel oil.

The key assumptions and methodologies of the oil spill modelling for the TGP Offshore OPEP are summarised as follows:

- It was assumed that spilled material will move downwind at a rate of 3% of the wind speed (Det Norske Veritas (DNV), 2011) in addition to movement by tidal currents. This provided the movement of the centroid of a spill
- It was assumed that the source of the spill will be a vessel that could be working at any point along the length of the Offshore TGP with equal likelihood
- A Monte Carlo simulation was run for 100,000 events to plot contours of frequency of occurrence of spilled material at intervals of 12, 24, 36 and 48 hours after the spill event
- Wind data was derived from the Bureau of Meteorology operational model system, and tidal currents extracted at ten locations equally spaced along the pipeline from a calibrated numerical model of the tidal currents in Bass Strait

Does not take into account the weathering and fate of the spilled oil

Figure 2-10 shows the distribution of the centroids for all runs.



**Figure 2-10: Results of 100,000 Fuel Oil Spill Simulations**

Figure 2-11 show the percentage probability of the centroid occurring in a 5 km grid on the assumption that a hydrocarbon spill occurs.

Fuel tank breach through accidents because of extreme weather events or collision between vessels is considered unlikely due to the control measures in place (Section 6.10.4). Furthermore, with respect to accidents during extreme weather events, the maximum distance that a vessel working near the Offshore TGP could be from a safe mainland harbour is 160 km. Consequently, if weather conditions are predicted to deteriorate, vessels will terminate activities and seek refuge.

Since the likelihood of a spill is very low and field maintenance and subsea inspection activities only occur every 2 years, multiplying this by the low occurrence probability results in an extremely low likelihood of a spill occurring at any given location (Cardno, 2013).

Based on the trajectory modelling results, the environment that may be affected (EMBA) has been conservatively defined as the area within the 0.000 contour (representing a probability of less than 0.0005%) after 48 hours, refer Figure 2-12 for the 48-hour model.

The spill of 40 m<sup>3</sup> was also modelled using ADIOS II (Automated Data Inquiry for Oil Spills) to predict how the diesel oil would weather (undergo physical and chemical changes) in the marine environment defined in Table 2-9, to confirm the definition of the EMBA. It was predicted that the surface life for an instantaneous diesel spill of 40 m<sup>3</sup> from a worst-case vessel collision incident is estimated at 12 hours (Figure 2-11).

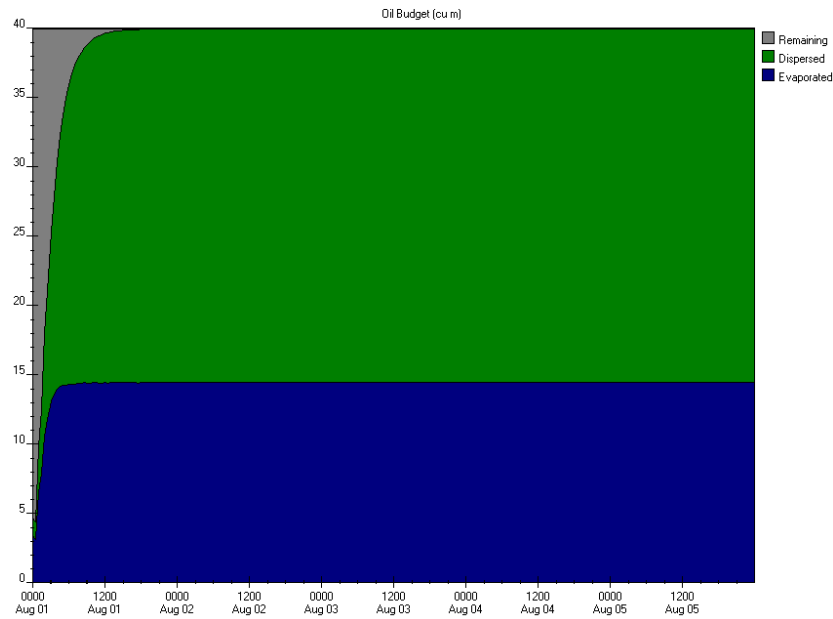
**Table 2-9: Average characteristics for Bass Strait (Winter)**

|           | Current | Wind  | Water Temperature | Salinity |
|-----------|---------|-------|-------------------|----------|
| Details   | 0.3 m/s | 8 m/s | 12°C              | 35 ppt   |
| Direction | East    | West  | -                 | -        |

Due to rapid and high levels of evaporation when spilt at sea, the environmental effects of diesel spills are generally short-term. When spilled at sea, diesel will spread and thin out quickly, with up to 37 m<sup>3</sup> (over 90%) predicted to be lost by evaporation and dispersion within just 6 hours, depending upon sea temperature and winds (Figure 2-11). Diesel oils also have low viscosities and can result in hydrocarbons becoming physically dispersed as fine droplets into the water column when winds exceed 10 knots. Droplets of diesel oil that are naturally dispersed will be sub-surface

(3 - 10 m depending on the conditions) and will move solely with the currents while dispersed in the water, while on the surface are affected by both wind and currents.

The definition of the EMBA as shown in Figure 2-12 is considered conservative given that the ADIOS modelling indicates that the surface life for a 40 m<sup>3</sup> diesel spill is approximately 12 hours. The area potentially exposed to surface oil within the 0.000 contour after 12 hours is considerably smaller with minimal shoreline contact. The ADIOS modelling confirms that the trajectory modelling provides a relevant and conservative basis for the definition of the EMBA and identification of receptors in the environment (see Section 6.10.2).



**Figure 2-11: Percentage % of Oil Remaining from a 40m<sup>3</sup> Diesel Spill**

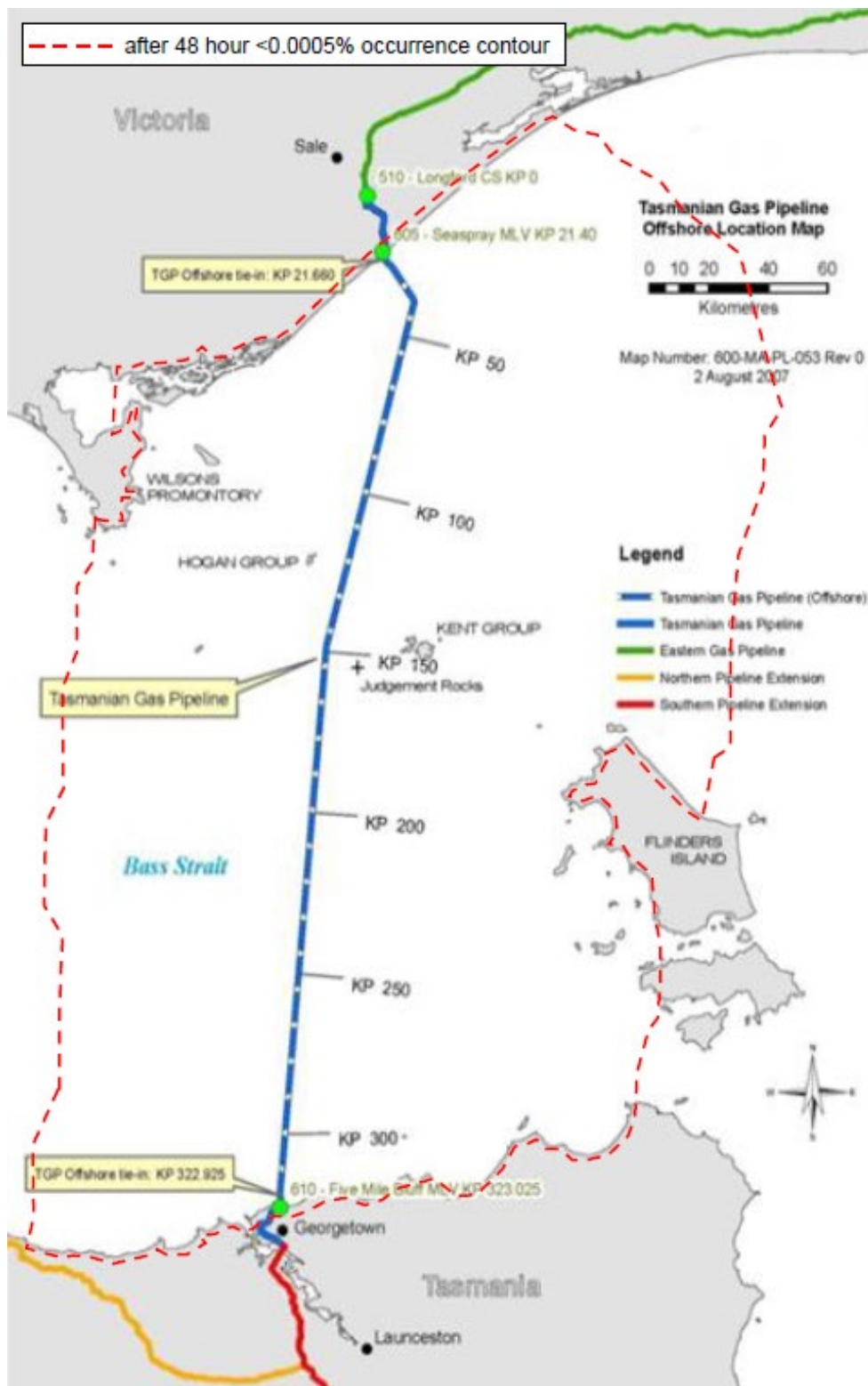


Figure 2-12: Environment that May Be Affected (EMBA) by the Petroleum Activity defined by 0.000 contour after 48 hours

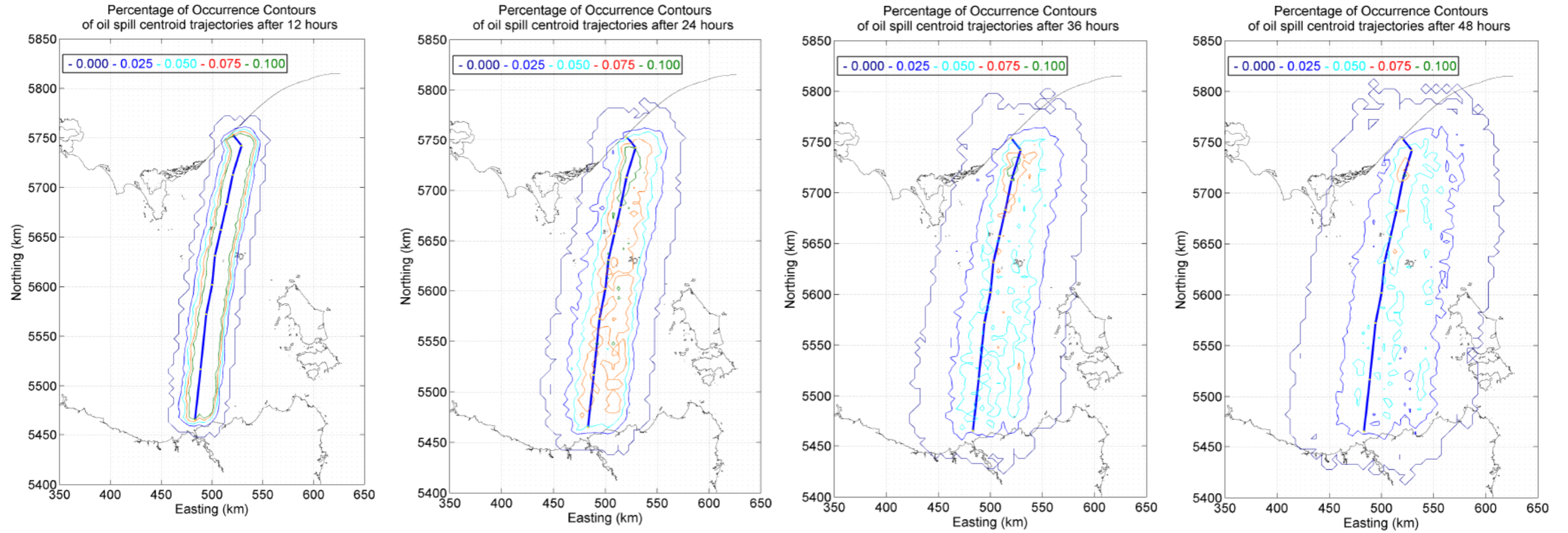


Figure 2-13: Percentage of Occurrence Contours of Spill Centroid Trajectories after 12, 24, 36 & 48 hours

## 2.3 Reportable Incidents

There have been no reportable or recordable incidents or spills associated with the TGP in Victorian and Tasmanian state waters, and Commonwealth waters from 2020 to date (November 2025).

### 3. ENVIRONMENTAL LEGISLATION, REGULATIONS AND REQUIREMENTS

#### 3.1 Legislative and Regulatory Requirements

The TGP is operated in accordance with strict statutory and regulatory requirements and company policy which includes provisions for environmental protection. The Offshore TGP route spans three administrative jurisdictions:

- Victoria – Seaspray high water mark to 3 NM offshore
- Commonwealth – 3 NM offshore from Seaspray to 3 NM offshore from Five Mile Bluff in Tasmania
- Tasmania – 3 NM offshore to Five Mile Bluff low water mark

The Offshore TGP is subject to the requirements of State and Commonwealth legislation, and operation of the offshore pipeline must comply with a range of acts, regulations, codes, licences and policies under State and Commonwealth jurisdictions. Those relevant to environmental management and the EP are listed in the following sections. A summary of relevant Commonwealth and State legislation is also provided in Appendix A.

##### 3.1.1 Commonwealth OPGGS Act and Environmental Regulations

The Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGS Act) provides the regulatory framework for all offshore petroleum exploration, production and greenhouse gas activities in Commonwealth waters. The OPGGS Act is supported by regulations and directions covering matters such as safety, diving, petroleum resource management and environmental management.

The objective of the OPGGS Act is to ensure that offshore petroleum operations are performed in a way that is consistent with the principles of ecologically sustainable development (ESD), through an accepted EP with agreed environmental outcomes and performance standards.

Approvals required of a titleholder under the OPGGS Act relevant to the activity include the following:

- Environment Plan (EP) assessment and acceptance
- Oil Pollution Emergency Plan (OPEP) (see Section 9.4) assessment and acceptance

NOPSEMA has responsibility for the assessment and acceptance of this EP in accordance with the provisions of the OPGGS(E) Regulations.

Prior to accepting an EP, NOPSEMA must be reasonably satisfied that the titleholder has demonstrated compliance with the financial assurance requirements of subsection 571(2) of the OPGGS Act in a form acceptable to NOPSEMA.

The Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (OPGGS(E) Regulations) are intended to ensure that petroleum activities are consistent with the principles of ecologically sustainable development (ESD), and in accordance with an accepted EP that has appropriate environmental performance outcomes and standards, as well as measurement criteria for determining whether the objectives and standards are met.

The OPGGS(E) Regulations define the following core elements as critical components of the EP:

- Identifying the applicable environmental regulatory requirements
- Identifying and assessing the potential environmental effects and risks associated with normal (routine), as well as unforeseen (non-routine) events
- Documenting the environmental outcomes, performance standards and measurement criteria to be implemented to reduce potential environmental effects of the activity to ALARP
- Documenting the environmental management strategies that are to be implemented to manage potential environmental effects associated with the activity
- Demonstration of appropriate levels of consultation with defined relevant persons

The OPGGS(E) Regulations have been made under the OPGGS Act with the objective of ensuring that any petroleum or greenhouse gas activity carried out in the offshore area is carried out in a manner:

- Consistent with the principles of ecologically sustainable development (ESD) as set out in Section 3A of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
- By which the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable (ALARP)
- By which the environmental impacts and risks of the activity will be of an acceptable level

The main sections of the OPGGS(E) Regulations that are applicable to this Offshore EP are Part 2, which addresses the requirements for environment plans; and Part 3, which describes the requirements for notification of reportable and recordable incidents, reporting environmental performance and storage and accessibility of records.

### 3.1.2 EPBC Act

The EPBC Act is the Australian Commonwealth Government's central piece of environmental legislation. The EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places, which are defined in the EPBC Act as matters of national environmental significance (MNES). The 9 MNES to which the EPBC Act applies are:

- World heritage properties
- National heritage places
- Wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed)
- Nationally threatened species and ecological communities
- Migratory species
- Commonwealth marine areas
- The Great Barrier Reef Marine Park
- Nuclear actions (including uranium mining); and
- A water resource, in relation to coal seam gas development and large coal mining development

With respect to operation, inspection and maintenance of the Offshore TGP, the relevant MNES are wetlands of international importance; nationally threatened species and ecological communities; migratory species; and Commonwealth marine areas. These have been identified and discussed in Section 4.6.

Under the EPBC Act, activities in Commonwealth areas that could potentially result in killing, injuring, taking, trading, keeping or moving a member of a listed threatened species or ecological community, a member of a listed migratory species or a member of a listed marine species are illegal without a permit. Also, under the EPBC Act, all cetaceans (whales, dolphins and porpoises) are protected in Australian waters. The Australian Whale Sanctuary includes all Commonwealth waters from the 3 NM State waters limit out to the boundary of the Exclusive Economic Zone (i.e. out to 200 NM and further in some places). It is an offence to injure, take, trade, keep, move, harass, chase, herd, tag, mark or brand a cetacean in the Australian Whale Sanctuary without a permit.

NOPSEMA's environmental management authorisation process has been endorsed by the Federal Minister for the Environment as a program that meets the requirements of Part 10 (Section 146) of the EPBC Act. Since February 2014, NOPSEMA has responsibility for assessing oil and gas activities under the EPBC Act as part of its EP assessment process.

The OPGGS Act requires all activities to be consistent with the principles of ecological sustainable development (ESD), as defined by the EPBC Act (Part 3A). TGPPL has incorporated the principles of ESD into the assessment methodology described in Section 5, in the development of control

measures, the criteria for risk acceptance and in the definition of environmental performance outcomes and standards for each impact or risk. TGPPL believes that the commitments made within this EP demonstrate that the environmental management of the activity will be conducted in accordance with the principles of ESD.

TGPPL has confirmed in writing (letter from Director of National Parks dated 1 November 2013) that the pipeline licences issued under the Petroleum (Submerged Lands) Act 1967 are usage rights in relation to the seabed for the purposes of Section 359 of the EPBC Act and that as the licences were held immediately before the Beagle Australian Marine Park commenced, a permit is not required from the Director of National Parks to undertake repairs and maintenance.

### 3.1.3 Victorian OPGGS Act and Regulations

The principle offshore legislation for environmental management of petroleum activities within three nautical miles of the Victorian coast is the *Offshore Petroleum and Greenhouse Gas Storage (OPGGS) Act 2010* and the *Offshore Petroleum and Greenhouse Gas Storage Regulations 2021*. The Act and Regulations are administered by the Victorian Department of Energy, Environment and Climate Action (DEECA) and by NOPSEMA.

DEECA is responsible for licensing and environmental issues, while safety, diving, well and pipeline integrity are managed by NOPSEMA.

### 3.1.4 Environment Protection Act – Victoria

Protection of human health and the environment in Victoria and marine waters out to 12 mn falls under the jurisdiction of the Victorian *Environment Protection Act 2017* (EP Act), the *Environment Protection Regulations 2021* and the *Environment Reference Standard 2021*. The EP Act and subordinate Regulations are administered by the Victorian Environment Protection Authority (EPA).

Under the EP Act everyone in Victoria has a General Environmental Duty, which is defined as any person engaged in activity that may pose a risk of harm to human health or the environment from pollution or waste has a responsibility to minimise those risks so far as reasonably practicable (EPA Victoria, 2020).

### 3.1.5 Tasmanian PSLA and Regulations

The principle offshore legislation for environmental management of petroleum activities within three nautical miles of the Tasmanian coast is the *Petroleum (Submerged Lands) Act 1982* and the *Petroleum (Submerged Lands) (Management of Environment) Regulations 2022*. The Act and Regulations are administered by the Tasmanian Department of Natural Resources and the Environment, Mineral Resources Tasmania (MRT).

MRT is responsible for licensing and environmental issues, while safety, diving, well and pipeline integrity are managed by NOPSEMA.

### 3.1.6 Other Relevant Legislation

#### Commonwealth

- Aboriginal and Torres Strait Islander Heritage Protection Act 1984
- Australian Heritage Council Act 2003
- Australian Maritime Safety Authority Act 1990
- Biosecurity Act 2015 and Regulations 2016
- Biosecurity Amendment (Ballast Water and Other Measures) Act 2017
- Australian Ballast Water Management Requirements (Department of Agriculture, Water and Environment (DAWE, 2020)
- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

- Environment Protection and Biodiversity Conservation Regulations 2000
- Environment Protection (Sea Dumping) Act 1981
- Environment Protection (Sea Dumping) Regulations 1983
- National Environment Protection Council Act 1994
- National Greenhouse and Energy Reporting Act 2007
- Navigation Act 2012
- Navigation Regulations 2023
- Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023
- Ozone Protection and Synthetic Greenhouse Gas Management Act 1989
- Protection of the Sea (Harmful Antifouling Systems) Act 2006
- Protection of the Sea (Prevention of Pollution from Ships) Act 1983
- Protection of the Sea (Prevention of Pollution from Ships) (Orders) Regulations 1994
- Protection of the Sea (Powers of Intervention) Act 1981
- Protection of the Sea (Powers of Intervention) Regulations 1983
- Protection of the Sea (Civil Liability for Bunker Oil Pollution Damage) Act 2008
- Protection of the Sea (Shipping Levy) Act 1981
- Submarine Cables and Pipelines Protection Act 1963
- Underwater Cultural Heritage Act 2018

## Victoria

- Aboriginal Heritage Act 2006
- Aboriginal Heritage Amendment Act 2016
- Aboriginal Heritage Regulations 2018
- Dangerous Goods Act 1985
- Dangerous Goods (Storage and Handling) Regulations 2022
- Emergency Management Act 2013 and Regulations 2003
- Flora and Fauna Guarantee Act 1988
- Flora and Fauna Guarantee Regulations 2020
- Heritage Act 2017
- Heritage Amendment Act 2023
- Heritage Regulations 2017
- Heritage (Underwater Cultural Heritage) Regulations 2017
- Heritage (Historic Shipwrecks) Regulations 2007
- Marine and Coastal Act 2018
- Marine Safety Act 2010
- Marine Safety Regulations 2023
- Marine (Drug, Alcohol and Marine Pollution) Act 1988
- Marine (Drug, Alcohol and Marine Pollution) Regulations 2022
- Marine (Drug, Alcohol and Pollution Control) Amendment Regulations 2017

- National Parks Act 1975
- Pollution of Waters by Oils and Noxious Substances Act 1986
- Pollution of Waters by Oil and Noxious Substances Regulations 2022
- Wildlife Act 1975
- Wildlife Regulations 2024
- Wildlife (Marine Mammals) Regulations 2019.

## Tasmania

- Aboriginal Heritage Act 1975
- Aboriginal Relics (Consequential Amendments) Act 2017
- Emergency Management Act 2006
- Environmental Management and Pollution Control Act 1994
- Historic Cultural Heritage Act 1995
- Marine-related Incidents (MARPOL Implementation) Act 2020
- Nature Conservation Act 2002
- National Parks and Reserves Management Act 2002
- Pollution of Waters by Oil and Noxious Substances Regulations 2017
- State Policy on Water Quality Management 1997
- Threatened Species Protection Act 1995
- Threatened Species Protection Regulations 2016
- Whales Protection Act 1988
- Whales Protection Amendment Act 2012

### 3.1.7 International Agreements and Conventions

Australia is a signatory to various international agreements that have marine environment protection aspects. Activities within Commonwealth waters are expected to comply with the relevant requirements of each agreement and convention, including:

- Agreement on the Conservation of Albatrosses and Petrels 2018 (ACAP)
- China-Australia Migratory Bird Agreement 1986 (CAMBA)
- Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties 1969 (the Intervention Convention)
- Convention on the International Regulations for Preventing Collisions at Sea 1972 (COLREGs)
- Convention on the Conservation of Migratory Species of Wild Animals 1983 (Bonn Convention)
- Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter 1972 [London Convention]
- Convention on the Protection of the Underwater Cultural Heritage (UNESCO 2001)
- Convention on the Suppression of Unlawful Acts against the Safety of Maritime Navigation 1988
- Convention on Wetlands of International Importance 1971 (Ramsar Convention)
- Framework Convention on Climate Change 1992
- International Convention on Civil Liability for Oil Pollution Damage 1992

- International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004
- International Convention on the Control of Harmful Anti-fouling systems on ships 2001 (HAFS Convention)
- International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC) - 1990
- International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)
  - Annex I (Prevention of pollution by oil)
  - Annex II (Control of pollution from noxious liquid substances)
  - Annex III (Prevention of pollution by harmful substances in packaged form)
  - Annex IV (Prevention of pollution by sewage from ships)
  - Annex V (Prevention of pollution by garbage from ships)
  - Annex VI (Prevention of air pollution from ships)
- International Convention on the Safety of Life at Sea 1974 (SOLAS Convention)
- International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 (STCW)
- Japan-Australia Migratory Bird Agreement 1974 (JAMBA)
- Minamata Convention on Mercury 2013
- Montreal Protocol on Substances that Deplete the Ozone Layer 1987
- Protocol on the Prevention of Marine Pollution by Dumping of Waste and Other Matter 1996 [London Protocol]
- Protocol Relating to Intervention on the High Seas in Cases of Marine Pollution by Substances other than Oil 1973
- Protocol on Preparedness, Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances (OPRC-HNS Protocol)
- Republic of Korea-Australia Migratory Bird Agreement 2002 (ROKAMBA).
- United Nations Declaration of the Rights of Indigenous Peoples 2007
- Vienna Convention on the Protection of the Ozone Layer 1985

References to legislation governing the environmental impacts of Offshore TGP operations are summarised in Appendix A. A Compliance Calendar identifying the key legislative compliance requirements is maintained by the General Manager TGPPL and includes relevant environmental requirements within the online maintenance system. Refer also to Section 8.6 for further information regarding environmental reporting requirements.

Detailed, current and cross-referenced guidance for all relevant environmental regulatory requirements in Victoria and Tasmania are available to all staff via the TGPPL Intranet. TGPPL also maintains a few subscription services with external service providers to ensure that management are informed when there are legislative or regulatory changes (refer to Section 8.5.1 for further detail).

## 3.2 Standards, Industry Codes and Guidelines

The principal relevant industry codes of practice, Australian Standards (AS) and guidelines applicable to Offshore TGP operations are provided below. These documents are to be referenced during operations to aid in environmental management of the Offshore TGP.

### 3.2.1 NATPLAN

The National Plan for Maritime Environmental Emergencies (NATPLAN) (AMSA, 2020) is managed by AMSA and sets out national arrangements, policies and principles for the management of maritime environmental emergencies. It gives administrative effect to Australia's emergency response obligations relating to the:

- International Convention on Oil Pollution Preparedness, Response and Co-operation 1990
- Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances 2000
- International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties 1969
- Articles 198 and 221 of the United Nations Convention on the Law of the Sea (UNCLOS) 1982.

Further details on NATPLAN and oil spill response are described in detail within the OPEP in Section 9.4.

### 3.2.2 Industry Codes of Practice

- Australian Petroleum Production & Exploration Association (APPEA) - Code of Environmental Practice 2008
- AMSA 2013, Technical Guideline for the Preparation of Marine Pollution Contingency Plans for Marine and Coastal Facilities,
- International Marine Contractors Association (IMCA) - Code of practice for the safe and efficient operation of remotely operated vehicles 2009 (IMCA R 004)
- International Maritime Organisation (IMO) - International Maritime Dangerous Goods (IMDG) Code 2008
- International Maritime Organisation - 2023 Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (Biofouling Guidelines)
- Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(2004)]
- Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
- Safe Work Australia - Managing Risks of Hazardous Chemicals in the Workplace - Code of Practice (July 2012).

### 3.2.3 Industry Standards or Guidelines

- ASME B31.8: 2020 - Gas Transmission and Distribution Piping Systems
- AS 1940: 2017 - The storage and handling of flammable and combustible liquids
- AS 2885.1: 2018 - Pipelines - Gas and Liquid Petroleum - Part 1: Design and construction
- AS 2885.3: 2022 - Pipelines - Gas and Liquid Petroleum - Part 3: Operation and maintenance
- AS 2885.4: 2016 - Pipelines - Gas and Liquid Petroleum - Submarine Pipeline Systems
- AS 3780: 2023 - The storage and handling of corrosive substances
- AS ISO 19600:2023 - Compliance Management Systems - Guidelines
- AS/NZS ISO 14001: 2016 Environmental Management Systems - Requirements with guidance for use

- AS/NZS ISO 31000: 2009 - Risk Management – Principles and Guidelines
- SA/SNZ HB 436: 2013 – Risk Management Guidelines – Companion to AS/ZS ISO 31000: 2009)
- DNV Standard DNV-OS-F101: 2000 – Submarine Pipeline Systems (latest version 2021)
- DNV-RP B401: 2005 – Recommended Practice - Cathodic Protection Design (latest version 2021-05)
- DNV-RP-F105: 2006 Recommended Practice – Free Spanning Pipelines (Edition 2017-06 0 Amended 2021-09)
- DNV-RP-F109: 2010 - On-bottom Stability Design of Submarine Pipelines (previously DNV-RP E305: 1988) (Edition 2021-05)
- DNV-RP-C205: 2014 – Environmental Conditions and Environmental Loads (previously DNV CN 30.5) (Edition 2019-09 - Amended 2021-09)
- DNV-RP-F111: 2014 - Interference between Trawl Gear and Pipelines (Edition 2017-05 - Amended 2021-10)
- HB 203: 2012 – Managing environment-related risk
- IMCA D042 - Diver and ROV based concrete mattress handling, deployment, installation, repositioning and decommissioning (also IMCA R016 2011), Rev. 1 (September 2011).

### 3.2.4 Other Environmental Guidelines

- Australian National Guidelines for Whale and Dolphin Watching 2017 (DoEE)
- EPBC Act Significant Impact Guidelines 1.1 – Matters of National Environmental Significance
- Environmental Management in Oil and Gas Exploration and Production, International Association of Oil and Gas Producers (OGP) (1997)
- National biofouling management guidance for the petroleum production and exploration industry (Commonwealth of Australia, April 2009)
- National Strategy for Ecologically Sustainable Development, ESDSC (1992)
- NOPSEMA Guidance Notes (including but not limited to the following Guidance Notes):
  - GN-0166 – ALARP
  - GN-0271 - Control measures and performance standards
  - GN-0926 - Notification and Reporting of Environmental Incidents
  - GN-1065 - Risk assessment
  - GN-1344 - Environment Plan Content Requirements
  - GN-1488 - Oil Pollution Risk Management
  - GN-1785 - Petroleum Activities and Australian Marine Parks

## 4. DESCRIPTION OF THE ENVIRONMENT

TGP's operational area (OA) (Figure 2-1) is defined in Table 1-2, as being 200 m either side of the offshore portion of the TGP pipeline.

TGP's environment that may be affected (EMBA) (Figure 2-1 and Figure 2-12) is defined as the area that could potentially be impacted from a worst-case fuel spill, resulting from an inspection or maintenance vessel as described in Section 2.2.2.2. The main features of the environment traversed by the pipeline, including the EMBA, are described below. Appendix B contains the EPBC Act Protected Matters Report for the EMBA which informed this description of environment.

From the consultation with relevant persons (refer to summary in Section 10.14), no other environmental features, sites or information to inform an extended definition of environmentally significant areas were raised or identified beyond those mentioned in the following sections detailing the environment.

Environmental features of the pipeline route are comprehensively described in reports prepared prior to the construction of the pipeline for Duke Energy International (DEI). These reports were prepared to examine the potential environmental effects of the construction and operation of the pipeline, as well as proposed management measures, and were used to assist in determining the final pipeline route so that environmental impacts would be minimised. They include:

- DEI Tasmania Holdings Pty Ltd. 2001. Tasmania Natural Gas Project – Stage 1 Longford, Victoria to Bell Bay Power Station, Tasmania - Public Environment Report. Prepared by Hydro Tasmania. Volumes 1 to 10
- DEI Tasmania Holdings Pty Ltd. 2001. Tasmania Natural Gas Project – Stage 2 Bell Bay Power Station to Port Latta – Development Proposal and Environmental Management Plan. Prepared by Hydro Tasmania. Volumes 1 to 3
- DEI Tasmania Holdings Pty Ltd. Tasmania Natural Gas Project – Stage 3 Springfield to Boyer and Claremont. Volumes 1 to 3

The original pipeline reports concluded that operational activities are likely to have only minimal impact on the environment due to the location of the pipeline on the seabed and the unobtrusive nature and low frequency of inspection and maintenance activities (refer to Section 2.2). Further details on the environmental impacts identified are provided in Section 6.

## 4.1 Values and Sensitivities

The values, sensitivities and receptors found in the EMBA are summarized in Table 4-1.

**Table 4-1: Values and Sensitivities of the EMBA**

| Value/sensitivity   | Description  | EP Reference  |      |  |
|---|--|---------------|------|--|
| <b>Protected Matters</b>  |  |               |      |  |
| World Heritage  | Chapter 5, Part 15 of the EPBC Act, protects World Heritage listed properties. Which are defined as sites that represent the best examples of the world's cultural and heritage values. Australia has 20 World Heritage properties (DCCEEW, 2024c), none of which are located within or adjacent to the OA or EMBA.  | N/A           |      |  |
| National Heritage   | Properties of natural, historic, and indigenous places of outstanding significance to the nation are protected National Heritage listed properties. There are 124 National Heritage properties (DCCEEW, 2024b), none of which are found within or adjacent to the OA or EMBA. National Heritage properties are protected under Chapter 5, Part 15 of the EPBC Act. | N/A           |      |  |
| Wetlands of International Importance (Ramsar Wetlands)            | Ramsar wetlands are wetlands that are representative, rare or unique, or are important for conserving biological diversity and are included on the List of Wetlands of International Importance (DCCEEW, 2023b). These wetlands are protected under Chapter 5, Part 15 of the EPBC Act.  | Section 4.6.1 |      |  |
|   | There is 1 Ramsar wetland within or adjacent to the OA, and a further 5 within or adjacent to the EMBA, being:   |               |      |  |
|   |  | OA            | EMBA |  |
|   | Corner Inlet   |               | ✓    |  |
|   | East Coast Cape Barren Island Lagoon   |               | ✓    |  |
|   | Flood Plain Lower Ringarooma River   |               | ✓    |  |
|   | Gippsland Lakes  | ✓             | ✓    |  |
|   | Logan Lagoon   |               | ✓    |  |
| Little Waterhouse Lake  |  | ✓             |      |  |
| Listed threatened species and listed migratory species (EPBC Act) |  | OA            | EMBA | Section 4.3.1, Appendix B and Appendix C |
|   | Listed threatened species  | 94            | 151  |  |
|   | Listed migratory species   | 48            | 77   |  |
|   | Listed marine species  | 85            | 121  |  |
|   | Whales and other cetaceans   | 15            | 29   |  |
|   | Vulnerable   | 2             | 2    |  |
|   | Endangered   | 2             | 2    |  |
|   | Birds  | 51            | 87   |  |
|   | Vulnerable   | 22            | 27   |  |
|   | Endangered   | 6             | 9    |  |
|   | Critically Endangered  | 4             | 4    |  |

| Value/sensitivity                   | Description  |                         |                        | EP Reference                             |
|-------------------------------------|--|-------------------------|------------------------|--|
|                                     | Fish   | 29                      | 29                     |  |
|                                     | Pinnipeds  | 2                       | 2                      |  |
|                                     | Reptiles   | 3                       | 3                      |  |
|                                     | Vulnerable   | 1                       | 1                      |  |
|                                     | Endangered   | 2                       | 2                      |  |
| Listed threatened species (FFG Act) |  |                         | OA                     |  |
|                                     | Listed threatened species  |                         | 34                     |  |
|                                     | Whales and other cetaceans   |                         | 1                      |  |
|                                     | Endangered   |                         | 1                      |  |
|                                     | Birds  |                         | 29                     |  |
|                                     | Vulnerable   |                         | 13                     |  |
|                                     | Endangered   |                         | 8                      |  |
|                                     | Critically Endangered  |                         | 8                      |  |
|                                     | Fish   |                         | 3                      |  |
|                                     | Vulnerable   |                         | 1                      |  |
|                                     | Endangered   |                         | 1                      |  |
|                                     | Conservation Dependent   |                         | 1                      |  |
|                                     | Reptiles   |                         | 1                      |  |
|                                     |  |                         | 1                      |  |
| Biologically Important Areas (BIAs) | BIAs are areas where a protected species carry out critical life functions, such as reproduction, feeding, resting or utilise for migration. These areas are important for the conservation of a protected species (DCCEEW, 2025d). Appendix B identifies 23 BIAs within the EMBA. |                         |                        | For more information refer to Table 4-2. |
|                                     |  | BIA type                |                        |  |
|                                     |  | OA                      | EMBA                   |  |
|                                     | Sharks   |                         |                        |  |
|                                     | Great White Shark  | Foraging, reproduction  | Foraging, reproduction |  |
|                                     | Cetaceans  |                         |                        |  |
|                                     | Blue Whale   | Foraging                | Foraging               |  |
| Southern Right Whale                | Reproduction, Migration  | Reproduction, Migration |                        |  |

| Value/sensitivity                               | Description  |          |                        | EP Reference  |
|---|--|----------|------------------------|---------------|
|   | Birds  |          |                        |               |
|   | Black-browed albatross   | Foraging | Foraging               |               |
|   | Black-faced cormorant  | Foraging | Foraging               |               |
|   | Buller's albatross   | Foraging | Foraging               |               |
|   | Campbell albatross   | Foraging | Foraging               |               |
|   | Common diving-petrel   | Foraging | Foraging               |               |
|   | Indian yellow-nosed albatross  | Foraging | Foraging               |               |
|   | Little penguin   | -        | Foraging, reproduction |               |
|   | Short-tailed shearwater  | Foraging | Foraging, reproduction |               |
|   | Shy albatross  | Foraging | Foraging, reproduction |               |
|   | Wandering albatross  | Foraging | Foraging               |               |
|   | White-faced storm-petrel   | Foraging | Foraging               |               |
|   | White-fronted tern   | -        | Foraging               |               |
| Listed Threatened Ecological Communities (TECs) | Where an ecological community is at risk of extinction when the natural composition and function has been significantly depleted across its ranges it is protected as under the EPBC Act as a listed threatened ecological community (DCCEEW, 2022a). Appendix B and E have identified 13 listed TECs within or adjacent to the EMBA. The Giant Kelp Marine Forests of South East Australia is the only marine community found in the OA and EMBA. |          |                        | Section 4.6.2 |
| Australian Marine Parks (AMPs)                  | Australian Marine Parks help conserve marine habitats and species that live within and rely on these habitats. The Australian Government has established 60 AMPs, with the Beagle National Park and Beagle Multiple Use Zone occurring within or adjacent to the OA.   |          |                        | Section 4.6.5 |
| Key Ecological Features (KEFs)                  | KEFs are elements of the Commonwealth marine environment that are considered to be of regional importance for either a region's biodiversity or its ecosystem function and integrity (DCCEEW, 2025c). There are no KEFs present in the OA and one in the EMBA, being Upwelling East of Eden.   |          |                        | Section 4.6.4 |
| Commonwealth Heritage listed places             | The Commonwealth Heritage List is a list of indigenous, historic, and natural heritage places owned or controlled by the Australian Government. While no Commonwealth Heritage Listed place lies within the OA, four known places are present in the EMBA, being: Goose Island Lighthouse, Mersey Bluff Lighthouse, Traralgon Post Office and Wilson's Promontory Lighthouse.  |          |                        | -             |
| Physical environment                            | Refer to Section 4.2   |          |                        |               |
| Cultural environment                            | Refer to Section 4.4   |          |                        |               |
| Socio-economic environment                      | Refer to Section 4.5   |          |                        |               |

## 4.2 Physical Environment

Bass Strait was formed approximately 12,000 years ago by the inundation of a land bridge that had once connected Tasmania and Victoria (National Museum Australia, 2022). It is a comparatively shallow sea (depths of up to 80 m) with the western and eastern entrances defined by the continental shelf that extends between King Island and Cape Otway in the west and between Flinders Island and Wilsons Promontory in the east. Beyond the continental shelf the seabed declines sharply to depths over 3,000 m.

The seabed along the direct route between Seaspray and Five Mile Bluff is reasonably featureless (refer to Figure 4-1). Near the pipeline the seabed consists primarily of fine and medium grained quartzose sands with a mean grain size of 0.12 to 0.25 mm (refer to Figure 4-2 for a sea floor image). Coarse sands and gravels are present to a lesser extent in the proximity of the Victorian shore crossing (Hydro Tasmania, 2001). Seabed current manipulations have formed some sand waves.

Circulation, or mixing of water, in Bass Strait is mainly dependent on tidal currents, but wind-driven currents, coastal trapped waves, barometric pressure-induced currents, density-driven flows and ocean-scale circulation patterns also contribute. The current speeds ultimately depend on the proximity to the eastern entrance of Bass Strait, with lower current speeds expected to the west. Current speeds between 0.30 m/s and 0.79 m/s occur during 5-year return period storms, while current speeds of 0.41 m/s to 1.03 m/s occur during 100-year return period storms (Hydro Tasmania, 2001).

The average annual rainfall is 716.7 mm (recorded at Deal Island in the Kent Group), with the highest rainfall and most rainy days occurring from May through to August. Winds are typically strongest during spring and weakest during the winter: 50-60% of winds are under 10 knots, with 30-37% of winds occurring between 10 and 20 knots. Strongest winds (greater than 20 knots) mainly originate from the west. Average temperatures range from 8.2°C in winter to 20.5°C in summer (Australian Government Bureau of Meteorology, 2024)

Protection of the region from westerly and south-westerly swells is provided by Wilsons Promontory, Tasmania and King Island. However, during 5 and 100 year storm events, wave heights may range from 4.5 m to 5.5 m and 6.8 m to 7.5 m, respectively. Although the Offshore TGP was originally laid on the surface of the seabed, strong current and wave activity may result in shifting sands and periodical burial of pipeline sections. Seismic activity along the pipeline route was considered during the design phase of the pipeline and was confirmed to be of minimal risk.

Referring to the EPBC Act Protected Matters Report (see Appendix MNES list), the physical environment didn't include any matters of national environment significance (MNES) as no World Heritage Properties or National Heritage Places were identified within the area nominated (using the EMBA as the reference area when running the report). Within the report, there were other physical environmental features within the matters protected by the EPBC Act identified. These are:

- Commonwealth areas listed include primarily defence lands: AFFSE – Scottsdale, Devenport Training Depot, Dutson Bombing Range, East Sale Surveillance Radar, RRAF East Sale, and other unknown Commonwealth lands.
- Commonwealth Heritage Places include Goose Island Lighthouse (TAS), Mersey Bluff Lighthouse (TAS), Traralgon Post Office (VIC) and Wilsons Promontory Lighthouse (VIC).

In the context of this Offshore Environment Plan, there is no direct impact to these areas identified in the activities as the locations are onshore. The main consideration is to ensure where an activity is planned and consultation is required, that the Department of Defence is considered as a potential relevant person. More information on wetlands, shipwrecks, Commonwealth marine areas, Parks and other MNES are considered in Section 4.6.

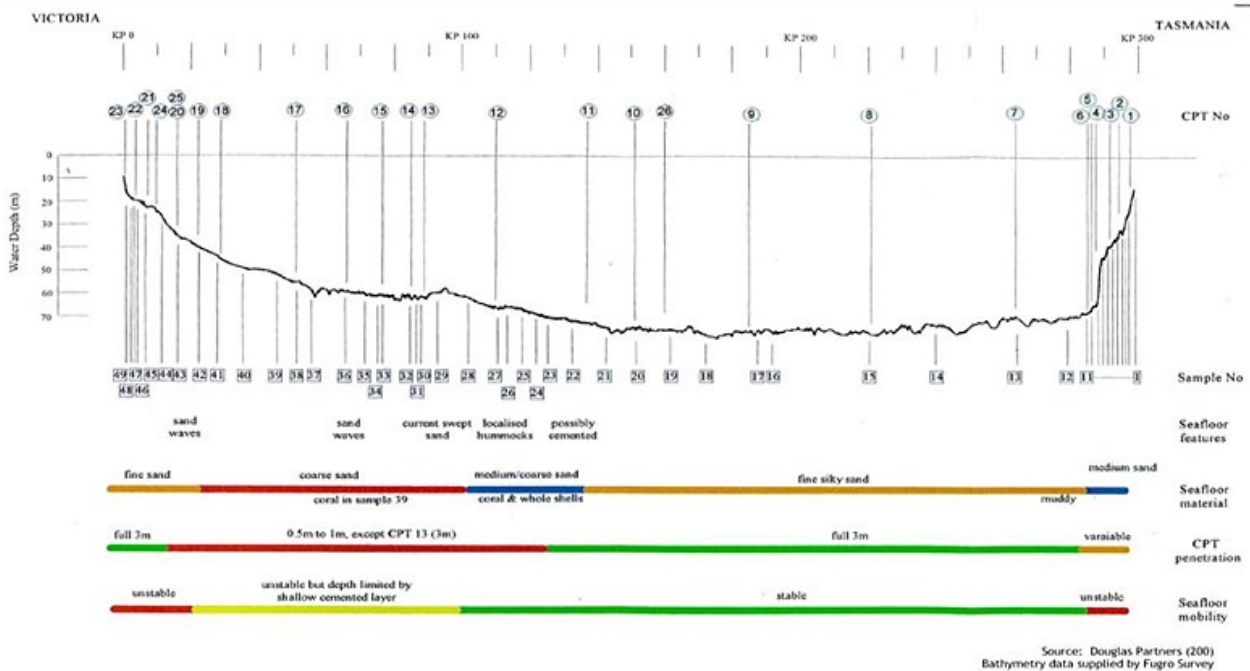


Figure 4-1: Bass Strait Sea Floor Features



Figure 4-2: TGP subsea pipeline and seabed (2008)

The Offshore TGP route does not lie within any significant terrestrial features, with the closest landform 10 km away, but does pass within the vicinity of several small islands or island groups (as shown in Figure 2-1). These include (in order from north to south):

**The Hogan Island Group** - straddles the border between Victoria and Tasmania and is located about 10 km to the west of the Offshore TGP and about 45 km east of Wilsons Promontory, Victoria. It is made up of one main island: Hogan Island and several islets including Boundary Islet, East Islet, Long Islet, Twin Islet, Round Islet and Seal Rock. Boundary Islet is the land boundary between Victoria and Tasmania

**The Curtis Island Group** - lying about 25 km west of the pipeline and made up of Curtis Island, Cone Island, Sugarloaf Rock and Devils Tower

**The Kent Group** - an archipelago of six islands and offshore rocks situated approximately halfway between Wilsons Promontory and the northern end of Flinders Island. The main groups of islands (incorporating Deal, Dover and Erith Islands) lie about 23 km east of the Offshore TGP. Two minor islets, Northeast and Southwest are within the vicinity of this group, however, Judgement Rocks, a small granite island with an area of 0.39 hectares (ha) lies to the south-west of the main islands of the Kent Group and about 10 km east of the pipeline

**The Bass Pyramid Group** - made up of Craggy Island, Wright Rock and Bass Pyramid and lying between Flinders Island and the Kent Group. Bass Pyramid is a small, steep-sided granite island with an area of <1 ha and lies about 20 km east of the pipeline

**Tenth Island** - part of the Waterhouse Island Group off the northern coast of Tasmania, lies approximately 9 km east of the pipeline

All islands, apart from Boundary Islet within the Hogan Island Group, are under the jurisdiction of Tasmania and are located at least 8 km from the Offshore TGP.

### 4.3 Biological Environment

The biological environment section considers the flora, fauna, and species identified within the EPBC as vulnerable or endangered. The Bass Strait is an area of relative high faunal diversity and supports a number of species of high conservation and commercial value. This is partly due to its unique biogeographical location at the convergence of three marine biogeographical regions: the Peronian (New South Wales), Maugean (Tasmania) and Flindersian (southern Australia) (Edgar, 1984).

There are many different temperate ocean habitat types represented in Bass Strait, from open beaches and rocky reefs (both exposed and sheltered) to offshore islands, soft bottom habitats (sand, mud and seagrass) and open sea.

The main marine species and communities present within, and immediately surrounding, the Offshore TGP route primarily comprises:

**Benthic infauna and epifauna** (fauna living within and on the seabed) - Include brittlestars, urchins, sponges, lamp shells, crabs, sea squirts, polychaete worms, bivalves and molluscs. Bass Strait as a whole has a relatively heterogeneous benthic habitat and has one of the highest biodiversities of benthic fauna in the world. The substrate along the pipeline route itself, however, represents a largely homogenous habitat type and is not significantly diverse from other regions within Bass Strait (Hydro Tasmania 2001). While a number of species that occur in south-east Australian waters are endemic to the area, most of these species are widely distributed throughout the region (Phillips et al, 1984). Any impacts will be localised and unique faunal elements are unlikely to be disturbed

**Birds** - Include resident seabirds and migratory species crossing Bass Strait. Large breeding seabird colonies exist around the Kent Group, particularly on Deal and Erith Islands and two small islets known as North East and South West Islands. Species include Common Diving Petrels, Short-tailed Shearwaters, Little Penguins, Pacific Gulls, Sooty Oystercatchers and cormorants (Kent Management Plan, 2005). Species listed under the EPBC Act also breed within islands of the Kent Group, including the Vulnerable Fairy Prion (*Pachyptila turtur subantarctica*) and Cape Barren Goose (*Cereopsis novaehollandiae grisea*).

A foraging BIA has been identified for a number of albatross, petrel and shearwater species: Antipodean, Buller's, Shy, Black-browed, Campbell, Wandering and Indian Yellow-nosed Albatross, Common Diving and White-faced Storm Petrels and Short-tailed Shearwater, in Bass Strait and along the edge of the continental shelf (DoEE 2015a). The Australian populations of both the Common Diving and White-faced Storm Petrels account for a significant proportion of the global populations and breeding BIAs have been identified around the Kent Group and Furneaux Group respectively. Bass Strait has the largest proportion of Little Penguin breeding

colonies in Australia at approximately 60% and foraging and breeding BIAs have been identified for the Little Penguin around both the Kent and Furneaux Island groups (DoEE 2015a).

Up to 60 threatened species listed under the EPBC Act may occur, or are likely to occur, within the EMBA throughout the year (Appendix B). Many of these species are protected under international agreements (e.g. CAMBA, JAMBA and ROKAMBA – refer to Section 3.1) and may be observed passing through Bass Strait on their way to or from mainland Victoria and Tasmania. This includes land-based species such as the endangered Swift Parrot (*Lathamus discolor*), which migrates from southern Tasmania to Victoria every winter.

**Cetaceans** - About 15 species of whales and dolphins have been observed in Bass Strait, although only a minority are resident or have been observed frequently. The most freely seen are the Common (*Delphinus delphis*) and Bottle-nosed (*Tursiops truncatus*) dolphins. Several whales also visit the region during annual migrations to and from their breeding grounds (mostly during the winter months). These include the Blue Whale (*Balaenoptera musculus*) and Southern-right Whale (*Eubalaena australis*), which are listed as Endangered under the EPBC Act, and the Humpback Whale (*Megaptera novaeangliae*) is listed as Vulnerable (Appendix MNES list). All cetaceans are susceptible to direct disturbance from shipping operations, including seismic or acoustic surveys, collision with large vessels, and pollution from plastics, oil spills and dumping of industrial wastes which can lead to bioaccumulation of toxins in cetacean body tissues.

Sightings of Blue Whales in Bass Strait are reasonably rare (Bannister *et al.*, 1996), though they may be encountered year-round (Torterotot, Samaran, Stafford, & Royer, 2020). A BIA for the Pygmy Blue Whale for distribution and possible foraging (DCCEEW, 2015) has been identified in Bass Strait extending west to South Australia waters to the Bonney Upwelling, a known Pygmy Blue Whale feeding aggregation area. Pygmy blue whales tend to have a more seasonal distribution (Torterotot, Samaran, Stafford, & Royer, 2020) and this was supported by a passive acoustic study that found pygmy blue whales were often detected in late summer to autumn in the east of southern Australia (McCauley, Gravrilov, Jolliffe, Ward, & Gill, 2018).

Southern-right Whales migrate west along the southern Australian coastline to calving aggregation areas in western Victoria waters. BIAs for migration and distribution have been identified in Victorian coastal waters and in Bass Strait respectively shown in Table 4-2.

The main migration route of the Humpback Whale is along the east coast of Australia however some whales may migrate through Bass Strait.

**Macroalgae** - A detailed survey of the north-eastern Bass Strait Islands identified up to 40 species of macroalgae surrounding the Kent and Hogan Groups, an indicator of the nutrient rich waters and diversity of habitats available (Edgar, 1984)

**One fish species** potentially occurring within the EMBA was listed as vulnerable under the EPBC Act (Appendix MNES list): the Australian Grayling (*Prototroctes maraena*). The Australian Grayling is a migratory species that inhabits estuarine waters and coastal seas as larvae/juveniles, but spends most of its life in rivers and streams as an adult (DCCEEW, 2008)

**Pelagic and demersal species** (ocean dwelling species and those species that live close to the seafloor) - A number of important commercial fish and invertebrate species, with a relatively high diversity in fish species, have been recorded around the Kent Group (DPIWE, 2000). It is estimated that over 500 species of fish, including approximately 50 species of elasmobranchs (sharks and rays), are found in Bass Strait (LCC, 1993). There are no endemic species to the area, with most species being widely dispersed throughout the region

**Pinnipeds** - Pinnipeds, principally the Australian Fur Seal (*Arctocephalus pusillus*), frequent Bass Strait (Appendix MNES list). Many of the islands in Bass Strait are important breeding or haul-out sites for the Australian Fur Seal, there are 10 established breeding colonies of the Australian Fur Seal, which are restricted to islands in the Bass Strait; six occurring off the coast of Victoria and four off the coast of Tasmania (DCCEEW, 2024a), these are including large breeding colonies at Judgement Rocks and Tenth Island. Australian Fur Seals generally breed around November to December with the majority of pups suckled for about 8 months (DoE, 2015).

**Plankton** - There have been few studies of plankton populations in the Bass Strait region, however a key study by Watson and Chaloupka (1982) recorded over 170 species of zooplankton

during sampling of eastern Bass Strait waters, half of which were marine copepods. These are a key biomass component of the ocean food chain

**Reptiles** - There are several reptile species that are occasional vagrants to the eastern part of Bass Strait, including three species of marine turtle: the Loggerhead (*Caretta caretta*) and the Leatherback (*Dermochelys coriacea*), both of which are listed as Endangered and the Green Turtle which is listed as Vulnerable under the EPBC Act (Appendix MNES list).

**Two migratory species** which may be found in Bass Strait are listed as vulnerable under the EPBC Act (Appendix MNES list): the Great White Shark (*Carcharodon carcharias*) and the Whale Shark (*Rhincodon typus*). Ninety Mile Beach provides important feeding grounds for juvenile Great White Sharks, effectively representing nursery habitat. A Biologically Important Area (BIA) for breeding (nursery ground) has been established in the coastal region extending east from Wilsons Promontory. The Great White Shark moves seasonally along the Australian coast moving north in Autumn and Winter along the east coast and returning to southern Australian waters by early Summer. Sharks are known to congregate around seal colonies within the Kent and Hogan Group looking for food and these waters have been established as a foraging BIA for the Great White Shark. Whale Sharks generally occur in warmer oceanic waters off northern Australia and are not likely to be found in Bass Strait

It is also important to understand the community of introduced pests that are present in the area:

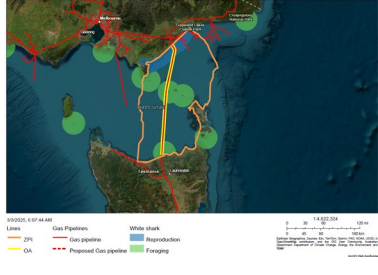


**Introduced Pests** – In the South-East marine region 115 species have been introduced and an additional 84 have been identified as cryptogenic (Parks Australia, 2002). It is likely that many of these species have been introduced by ballast water discharged from international shipping or attached to the many private and commercial vessels traversing Bass Strait. Key marine pests observed in northern Tasmania, Bass Strait and southern Victorian waters include the northern Pacific Seastar (*Asterias amurensi*), European Green Crab (*Carcinus maenas*), Asian Date Mussel (*Musculista senhousia*), European Clam (*Corbula gibba*), European Fan Worm (*Sabella spallanzanii*), New Zealand Screw Shell (*Maoricolpus roseus*), Japanese Kelp (*Undaria pinnatifida*) and Long-spined Sea Urchin (*Centrostephanus rodgersii*). All marine pests are considered a threat to the marine environment as they compete directly with native species for habitat and food.


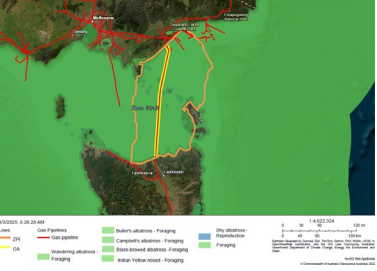
#### 4.3.1 Threatened and Migratory Species

For the majority of the species identified in Table 4-2, either conservation advice or a recovery plan have been identified by the DCCEEW, these have been found and referenced through the Species Profile and Threats Database (SPRAT) (DCCEEW, 2024g). These can also be referenced or located by following links directly from the MNES report (Appendix B) for each species, community, or site.


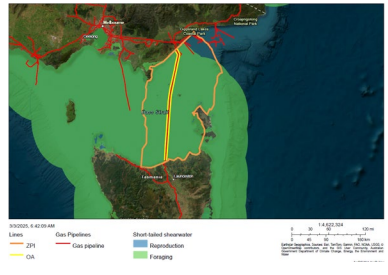
Additionally, there are broader recovery plans and advice that can be considered when identifying threats and actions to support conservation, such as the *Wildlife Conservation Plan for Seabirds (2022)*, *Lord Howe Island Biodiversity Management Plan (2008)*, and *National Recovery Plan for albatrosses and petrels (2022)* among others (DCCEEW, 2024f). These identify similar species or ecological communities that can be covered under one plan and some are considered in the table below as well.

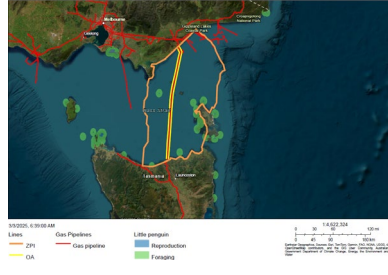
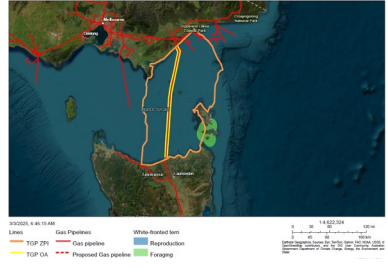
**Table 4-2: List of Threatened and Migratory Species within the TGP Operating Area (OA) or EMBA**

| Common Name                       | Conservation Advice or Recovery Plan  | Key Threats (relevant to petroleum activities)  | BIA  |      |   |
|-----------------------------------|---|---|------|------|---|
|                                   |   |   | OA   | EMBA | Map   |
| <b>Sharks</b>                     |   |   |      |      |   |
| Great White Shark <sup>1</sup>    | Recovery Plan for the White Shark   | None identified   | f, r | f, r |    |
| Whale Shark                       | Approved Conservation Advice for Whale Shark  | Vessel strike<br>Habitat destruction from mineral exploration, production and transportation<br>Marine debris   | -    | -    |   |
| <b>Fish</b>                       |   |   |      |      |   |
| Blue Warehou <sup>2</sup>         | -   | -   |      |      |   |
| <b>Cetaceans</b>                  |   |   |      |      |   |
| Pygmy Blue Whale                  | Conservation Management Plan for the Blue Whale, 2015-2025  | Noise interference<br>Habitat modification from marine debris or chemical discharge<br>Vessel strike  | f    | f    |  |
| Southern-right Whale <sup>1</sup> | Conservation Management Plan for the Southern-right Whale, 2011-2021.<br><br>National Recovery Plan for the Southern Right Whale (Eubalaena australis) 2024 | Noise interference<br>Pollution<br>Vessel strike<br><br><a href="https://www.dcceew.gov.au/sites/default/files/documents/national-recovery-plan-southern-right-whale.pdf">https://www.dcceew.gov.au/sites/default/files/documents/national-recovery-plan-southern-right-whale.pdf</a> | m    | r, m |  |
| Fin Whale                         | Approved Conservation Advice for Fin Whale  | Noise interference<br>Habitat modification<br>Vessel strike<br>Entanglement   | -    | -    |   |

| Common Name   | Conservation Advice or Recovery Plan                      | Key Threats (relevant to petroleum activities)                                   | BIA |      |  |
|---|---|--|-----|------|--|
|   |   |  | OA  | EMBA | Map  |
| Birds   |   |  |     |      |  |
| Antipodean Albatross  | National Recovery Plan for Albatrosses and Petrels (2022) | Human disturbance, climate change and marine pollution, including marine debris. | -   | f    |   |
| Southern Royal Albatross  | National Recovery Plan for Albatrosses and Petrels (2022) | Human disturbance, climate change and marine pollution, including marine debris. | -   | -    |  |
| Black-browed Albatross<br>Buller's Albatross<br>Campbell's Albatross<br>Indian Yellow-nosed Albatross<br>Shy Albatross <sup>1</sup><br>Wandering Albatross <sup>1</sup> | National Recovery Plan for Albatrosses and Petrels (2022) | Human disturbance, climate change and marine pollution, including marine debris. | f   | f    |  |
| Gibson's Albatross  | National Recovery Plan for Albatrosses and Petrels (2022) | Human disturbance, climate change and marine pollution, including marine debris. | f   | f    | N/A  |
| Northern Royal Albatross  | National Recovery Plan for Albatrosses and Petrels (2022) | Human disturbance, climate change and marine pollution, including marine debris. | -   | -    |  |
| Sooty Albatross   | National Recovery Plan for Albatrosses and Petrels (2022) | Human disturbance, climate change and marine pollution, including marine debris. | -   | -    |  |
| Chatham Albatross   | National Recovery Plan for Albatrosses and Petrels (2022) | Human disturbance, climate change and marine pollution, including marine debris. | -   | -    |  |
| Salvin's Albatross  | National Recovery Plan for Albatrosses and Petrels (2022) | Human disturbance, climate change and marine pollution, including marine debris. | -   | -    |  |

| Common Name  | Conservation Advice or Recovery Plan                                     | Key Threats (relevant to petroleum activities)                                   | BIA  |      |   |
|--|--|--|------|------|---|
|  |  |  | OA   | EMBA | Map   |
| White-capped Albatross                                 | National Recovery Plan for Albatrosses and Petrels (2022)                | Human disturbance, climate change and marine pollution, including marine debris. | -    | -    |   |
| Grey-headed Albatross                                  | National Recovery Plan for Albatrosses and Petrels (2022)                | Human disturbance, climate change and marine pollution, including marine debris. | -    | -    |   |
| Southern Giant Petrel                                  | National Recovery Plan for Albatrosses and Petrels (2022)                | Human disturbance, climate change and marine pollution, including marine debris. | -    | -    |   |
| Northern Giant Petrel                                  | National Recovery Plan for Albatrosses and Petrels (2022)                | Human disturbance, climate change and marine pollution, including marine debris. | -    | -    |   |
| Common Diving Petrel                                   | No approved Conservation Advice or Recovery Plan                         | -  | f, r | f, r |   |
| White-faced Storm Petrel<br>White-bellied Storm-Petrel | Lord Howe Island Biodiversity Management Plan                            | None identified  | f    | f, r |  |
| Blue Petrel  | Approved Conservation Advice for <i>Halobaena caerulea</i> (Blue Petrel) | None identified  | -    | -    |   |
| Gould's Petrel   | Gould's Petrel ( <i>Pterodroma leucoptera leucoptera</i> ) Recovery Plan | Oceanic oil spills   | -    | -    |   |

| Common Name   | Conservation Advice or Recovery Plan   | Key Threats (relevant to petroleum activities)                         | BIA  |      |   |
|---|--|--|------|------|---|
|   |  |  | OA   | EMBA | Map   |
| Black-faced Cormorant   | No approved Conservation Advice or Recovery Plan                                       | -  | f    | f, r |    |
| Greater Sand Plover   | Approved Conservation Advice for <i>Charadrius leschenaultii</i> (greater sand plover) | Habitat loss and degradation from pollution                            | -    | -    |   |
| Lesser Sand Plover <sup>1</sup>   | Approved Conservation Advice for <i>Charadrius mongolus</i> (Lesser Sand Plover)       | Habitat loss and degradation from pollution                            | -    | -    |   |
| Grey Plover <sup>2</sup>  |  |  |      |      |   |
| Hooded Plover <sup>1</sup> (eastern)  | Approved Conservation Advice for <i>Thinornis rubricollis</i> (Hooded Plover, Eastern) | Oil spills<br>Entanglements and ingestion of marine debris             | -    | -    |   |
| Curlew Sandpiper <sup>1</sup>   | Approved Conservation Advice for <i>Calidris ferruginea</i> (Curlew Sandpiper)         | Habitat loss and degradation from pollution<br>Environmental pollution | -    | -    |   |
| Sharp-tailed Sandpiper <sup>2</sup>   |  |  |      |      |   |
| Marsh Sandpiper <sup>2</sup> ,<br>Common Sandpiper <sup>2</sup> ,<br>Terek Sandpiper <sup>2</sup> |  |  |      |      |   |
| Short-tailed Shearwater   | No approved Conservation Advice or Recovery Plan                                       | -  | f, r | f, r |  |
| Sooty Shearwater <sup>2</sup>   |  |  |      |      |   |

| Common Name                              | Conservation Advice or Recovery Plan  | Key Threats (relevant to petroleum activities)   | BIA  |      |   |
|--|---|--|------|------|---|
|  |   |  | OA   | EMBA | Map   |
| Little penguin <sup>1</sup>              | No approved Conservation Advice or Recovery Plan  | -  | f, r | f, r |    |
| Australian Fairy Tern <sup>1</sup>       | Approved Conservation Advice for <i>Sternula nereis nereis</i> (Fairy Tern)<br>National Recovery Plan for the Australian Fairy Tern ( <i>Sternula nereis nereis</i> ) | Oil spills, particularly in Victoria, where the close proximity of oil facilities poses a risk of oil spills that may affect the species' breeding habitat | -    | -    |   |
| Australian Gull-biller Tern <sup>2</sup> |   |  |      |      |   |
| Caspian Tern <sup>2</sup>                |   |  |      |      |   |
| Little Tern <sup>2</sup>                 |   |  |      |      |   |
| White-fronted Tern                       | No approved Conservation Advice or Recovery Plan  | -  | -    | f, r |  |
| Tasmanian Wedge-tailed Eagle             | Threatened Tasmanian Eagles Recover Plan, 2006-2010 (2006)  | Oiling, entanglement, pollution  | -    | -    |   |
| Australasian Bittern <sup>1</sup>        | National Recovery Plan for the Australasian Bittern ( <i>Botaurus poiciloptilus</i> ) (2023)  | Reduced water quality as a result of increasing salinity, siltation and pollution  | -    | -    |   |
| Red Knot <sup>1</sup>                    | Approved Conservation Advice for <i>Calidris canutus</i> (Red Knot) (2024)  | Habitat loss and degradation from environmental pollution or contamination impacts   | -    | -    |   |
| Great Knot <sup>1</sup>                  | Approved Conservation Advice  | Habitat loss, disturbance, and pollution   | -    | -    |   |


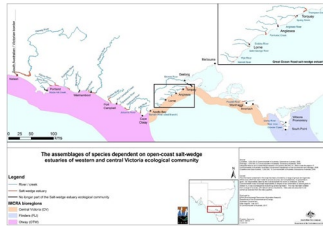
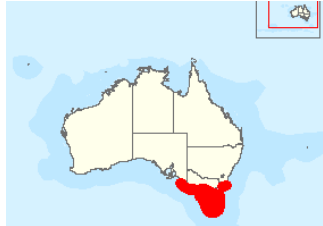


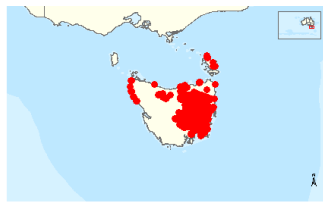
| Common Name   | Conservation Advice or Recovery Plan  | Key Threats (relevant to petroleum activities)  | BIA |      |     |
|---|---|---|-----|------|-----|
|   |   |   | OA  | EMBA | Map |
|   | for <i>Calidris tenuirostris</i> (Great Knot) (2024)  |   |     |      |     |
| Red Knot, Great Knot, Bar-tailed Godwit <sup>1</sup> , Greater Sand Plover <sup>1</sup> | Wildlife conservation plan for migratory shorebirds (2015)                                    | Habitat loss and degradation from environmental Pollution<br>Pollution or contamination impacts | -   | -    |     |
| Eastern Bristlebird   | National Recovery Plan for Eastern Bristlebird ( <i>Dasyornis brachypterus</i> ) (2022)       | None identified   | -   | -    |     |
| Swift Parrot  | National Recovery Plan for the Swift Parrot <i>Lathamus discolor</i> (2024)                   | None identified   | -   | -    |     |
| Bar-tailed Godwit   | Conservation Advice for <i>Limosa lapponica baueri</i> (Alaskan bar-tailed godwit) (2024)     | Habitat loss and degradation from pollution   | -   | -    |     |
| Lantham's Snipe <sup>2</sup>  |   |   |     |      |     |
| Tasmanian Masked Owl  | -   | -   | -   | -    |     |
| Alaskan Bar-tailed Godwit   | Conservation Advice for <i>Limosa lapponica baueri</i> (Alaskan bar-tailed godwit)(2024)      | Habitat loss and degradation from pollution   | -   | -    |     |
| Black-tailed Godwit   | Conservation Advice for <i>Limosa limosa</i> (black-tailed godwit) (2024)                     | Excessive industrial, and aquaculture discharges  | -   | -    |     |
| Orange-bellied Parrot   | National Recovery Plan for the Orange-bellied Parrot ( <i>Neophema chrysogaster</i> ) (2016)  | None identified   | -   | -    |     |
| Eastern Curlew <sup>1</sup>   | Approved Conservation Advice for <i>Numenius madagascariensis</i> (far eastern curlew) (2023) | Environmental pollution   | -   | -    |     |






| Common Name  | Conservation Advice or Recovery Plan  | Key Threats (relevant to petroleum activities)   | BIA |      |     |
|--|---|--|-----|------|-----|
|  |   |  | OA  | EMBA | Map |
| Fairy Prion (southern)   | Approved Conservation Advice for <i>Pachyptila turtur subantarctica</i> (Fairy Prion Southern)  | None identified  | -   | -    |     |
| Australian Painted Snipe <sup>1</sup>  | Approved Conservation Advice for <i>Rostratula australis</i> (Australian Painted Snipe)   | None identified  | -   | -    |     |
| Forty-spotted Pardalote  | Conservation Advice <i>Pardalotus quadraginatus</i> forty-spotted pardalote (2016)  | None Identified  | -   | -    |     |
| Regent Honeyeater  | Conservation Advice <i>Anthochaera phrygia</i> regent honeyeater. Canberra: Department of the Environment (2015)                              | None Identified  | -   | -    |     |
| Tasmanian Azure Kingfisher   | Approved Conservation Advice for <i>Ceyx azureus diemenensis</i> (Tasmanian Azure Kingfisher) (2010)  | None Identified  | -   | -    |     |
| Painted Honeyeater   | Conservation Advice <i>Grantiella picta</i> painted honeyeater. Canberra: Department of the Environment (2015)                                | None Identified  | -   | -    |     |
| <b>Marine Reptiles</b>   |   |  |     |      |     |
| Loggerhead Turtle  | Recovery Plan for Marine Turtles in Australia, 2017-2027  | Marine debris<br>Chemical discharge<br>Light pollution<br>Habitat modification<br>Vessel disturbance<br>Noise interference | -   | -    |     |
| Green Turtle   |   |  | -   | -    |     |
| Leatherback Turtle <sup>1</sup>  | Recovery Plan for Marine Turtles in Australia, 2017-2027<br>Approved Conservation Advice for <i>Dermochelys coriacea</i> (Leatherback Turtle) | As above   | -   | -    |     |
| Note: <sup>1</sup> Threatened Species under the FFG Act and the EPBC Act<br><sup>2</sup> Threatened Species under the FFG Act<br>Legend: f = foraging; r = reproduction; m = migrating |   |  |     |      |     |

### 4.3.2 Threatened Ecological Communities

The ecological communities considered in this section are considered likely to occur within the EMBA of activities, are listed as endangered or vulnerable within the MNES in Appendix B and are potentially impacted by the offshore activities discussed in this EP, they are listed in Table 4-3.

**Table 4-3: List of Threatened Ecological Communities within the EMBA (summarised from Appendix B)**

| Community Name  | Location  | Threatened Category   | Conservation Advice or Recovery Plan   | Key Threats (relevant to offshore petroleum activities) |
|---|---|-----------------------|--|---|
| Alpine Sphagnum Bogs and Associated Fens  |    | Endangered            | Alpine Sphagnum Bogs and Associated Fens Recovery Plan (2016)  | Onshore - N/A   |
| Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community |   | Endangered            | Conservation Advice for Salt-wedge Estuaries Ecological Communities (2017)   | Onshore - N/A   |
| Giant Kelp Marine Forests of South East Australia   |  | Endangered            | Approved Conservation Advice for Giant Kelp Marine Forests of South East Australia (2012)  | Introduction of invasive species.                       |
| Gippsland Red Gum Grassy Woodland and Associated Native Grassland   |  | Critically Endangered | Approved Conservation Advice for Gippsland Red Gum ( <i>Eucalyptus tereticornis</i> subsp. <i>mediana</i> ) Grassy Woodland and Associated Native Grassland (2008) | Onshore - N/A   |
| Littoral Rainforest and Coastal Vine Thickets of Eastern Australia  |  | Critically Endangered | National Recovery Plan for the Littoral Rainforest and Coastal Vine Thickets of Eastern Australia Ecological Community (2019)                                      | Onshore - N/A   |
| Lowland Native Grasslands of Tasmania   |  | Critically Endangered | Approved Conservation Advice for Lowland Native Grasslands of Tasmania ecological community (2009)   | Onshore - N/A   |

| Community Name  | Location  | Threatened Category   | Conservation Advice or Recovery Plan   | Key Threats (relevant to offshore petroleum activities)  |
|---|---|-----------------------|--|--|
| Natural Damp Grassland of the Victorian Coastal Plains  |    | Critically Endangered | Approved Conservation Advice (including listing advice) for the Natural Damp Grassland of the Victorian Coastal Plains (2015)                      | Onshore - N/A  |
| River-flat eucalypts forest on coastal floodplains of southern New South Wales and eastern Victoria |    | Critically Endangered | Conservation Advice <sup>1</sup> for the River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria (2020) | Onshore - N/A  |
| Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains                           |   | Critically Endangered | Conservation Advice for Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (2012)   | Onshore - N/A  |
| Subtropical and Temperate Coastal Saltmarsh   |  | Vulnerable            | Conservation Advice for Subtropical and Temperate Coastal Saltmarsh  | Pollution/litter - pollution and litter from stormwater or dumping of waste can smother coastal saltmarsh plants and introduce contaminants such as heavy metals or organic chemicals. Oil spills are also a major potential threat. |
| Tasmanian White Gum Wet Forest  |   | Critically Endangered |  | Onshore - N/A  |
| White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland                 |  | Critically Endangered | Conservation Advice for the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (2023)                             | Onshore - N/A  |

To manage the key threats in these areas, TGPPL identifies the risk through its Environmental Risk Assessment (ERA) process (Section 5.1.3) and controls to ALARP. For the management of introduction of invasive species, the relevant Commonwealth legislation such as the Australian Maritime Safety Authority Act 1990 along with Biosecurity and Ballast Water Management requirements in legislation and International Agreements and Conventions will be adhered to (refer to Section 3.1). The control measures for reducing introduction of invasive species are addressed in detail in Section 6.9.4.

## 4.4 Cultural Environment

A number of studies were undertaken prior to construction of the Offshore TGP to identify:

- The potential for the presence of submerged terrestrial sites dating from the period prior to the creation of Bass Strait (prehistoric)
- Potential and actual submerged archaeological remains associated with European period sites situated close to or on the coast near the proposed landfalls
- Known and potential shipwrecks within 5 nautical miles (nm) of the Offshore TGP route

The potential for impact of the Offshore TGP on submerged terrestrial sites is considered low, partly because of physical factors on surface deposits as sea levels rose, but also due to the subsequent sedimentation and burial of submerged terrestrial sites that would have occurred following inundation. No submerged terrestrial sites were identified during construction of the Offshore TGP.

The coastal zone of both Tasmania and Victoria potentially contains numerous heritage sites, predominantly of recent formation (last 1,000 years). However, archaeological surveys conducted prior to construction found little evidence within the pipeline route of sites of either Aboriginal or non-Aboriginal origin (Hydro Tasmania, 2001). All potential sites within the foreshore landform of the alignment were nonetheless avoided via use of directional drilling under the coastal zone.

### 4.4.1 Indigenous Culturally Significant Environments

The Bass Strait was not always covered by water, it was a plain or land bridge that used to extend from south-east Victoria to the north-east of Tasmania, populated by indigenous peoples first used approximately 40,000 years ago. After the ice-age ended and sea levels rose, the Bass Strait filled and became impassable by foot around 12,000 years ago (National Museum Australia, 2022).

It is important to understand that Indigenous people make no distinction between land and sea. They see themselves as having responsibilities and rights across the land and sea boundaries that have been put in place over the last 200 years. This corresponds to the idea that there is an unbroken custodianship with both the land and seas for many indigenous communities that value the health of the environment and connection with areas of cultural significance. Some of the major concerns when it comes to the South-East commonwealth marine environment are Coastal and marine resources remain very important to Indigenous people, particularly in relation to hunting and gathering. Protection of marine and land resources also fall within this, as these are often used in trade or other bargaining practices. The connection with land and sea, resources and environmental wellbeing is a holistic relationship, which remains frequently overlooked by non-Indigenous people (National Oceans Office, 2002).

These connections to land and sea remain the primary reasons for ensuring adequate consultation is conducted to best support and recognise any cultural impacts that activities within the Operating Area (OA) may have on the local indigenous communities. This is considered through community consultation (see Section 10).

Within Tasmania, there are currently no native titles, but there are many community groups. Currently, there has been funding granted by the Australian Government to create a Tayaritja/Bass Strait Islands Sea Country Indigenous Protected Area (IPA), the area surrounds Tayaritja/Bass Strait Islands and the northeast waters of Lutruwita/Tasmania. The aims of creating the IPA are to support the Palawa Community to connect with milaythina muka / Sea Country, and partner with others to understand, protect and manage milaythina muka. This will be the first IPA project in Lutruwita, and as of writing the EP is in the stage of community consultation (Centre, 2024)

The Gunai-Kurnai native title determination area in Victoria covers approximately 45,000 hectares and extends from west Gippsland near Warragul, east to the Snowy River and north to the Great Dividing Range. The area includes 10 parks and reserves that are jointly managed by the State government and the Gunai-Kurnai people (NNTT, 2010). Areas within and adjacent to the Ninety Mile Beach Marine National Park (refer to Section 4.6.6) are considered culturally and spiritually significant to the relevant indigenous communities. Additionally, an IPA has been created from Nanjit to Mallacoota, the coastal waters of the Gippsland region in Victoria. The area comprises numerous

marine and coastal parks and includes the Ramsar listed Gippsland Lakes and Raymond Island, a highly significant cultural site.

Although this Offshore EP applies to the offshore component of the TGP pipeline, the native title determination area is relevant given that the boundary extends to 200 m offshore between Lakes Entrance and Marlo. At the time of writing a Native Title Claimant Application was registered by the Gunai-Kurnai people for an area covering Wilsons Promontory (NNTT, 2010).

There are no native title determination areas in Tasmania however there are seven Indigenous Protected Areas on the islands of the Ferneux Group in Bass Strait (shown on map as 2 - Preminghana, 3 - Risdon Cove, 4 - Putalina, 10 - Badger Island, 26 - Babel Island, 27 - Great Dog Island, and 28 - lungatalanana) (NIAA, 2023).

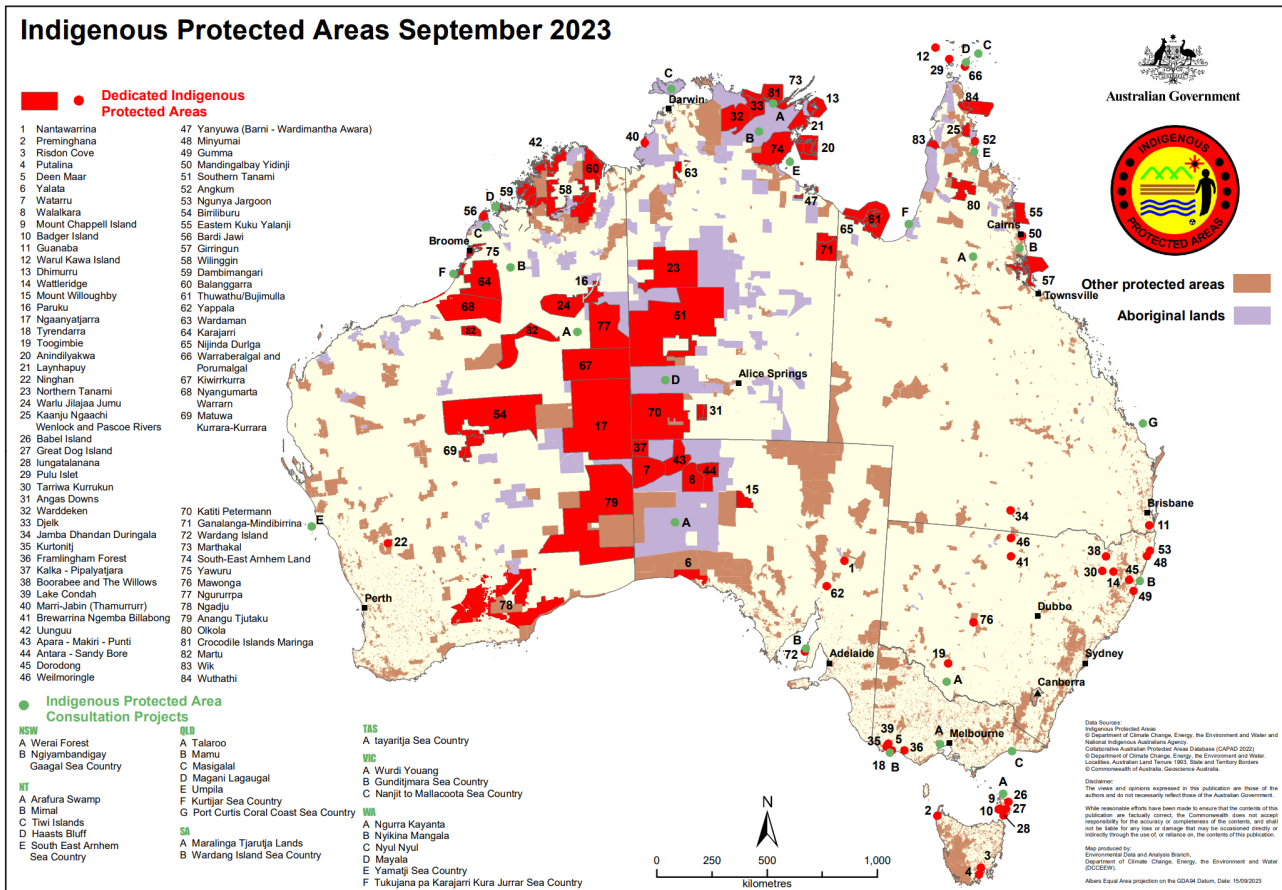


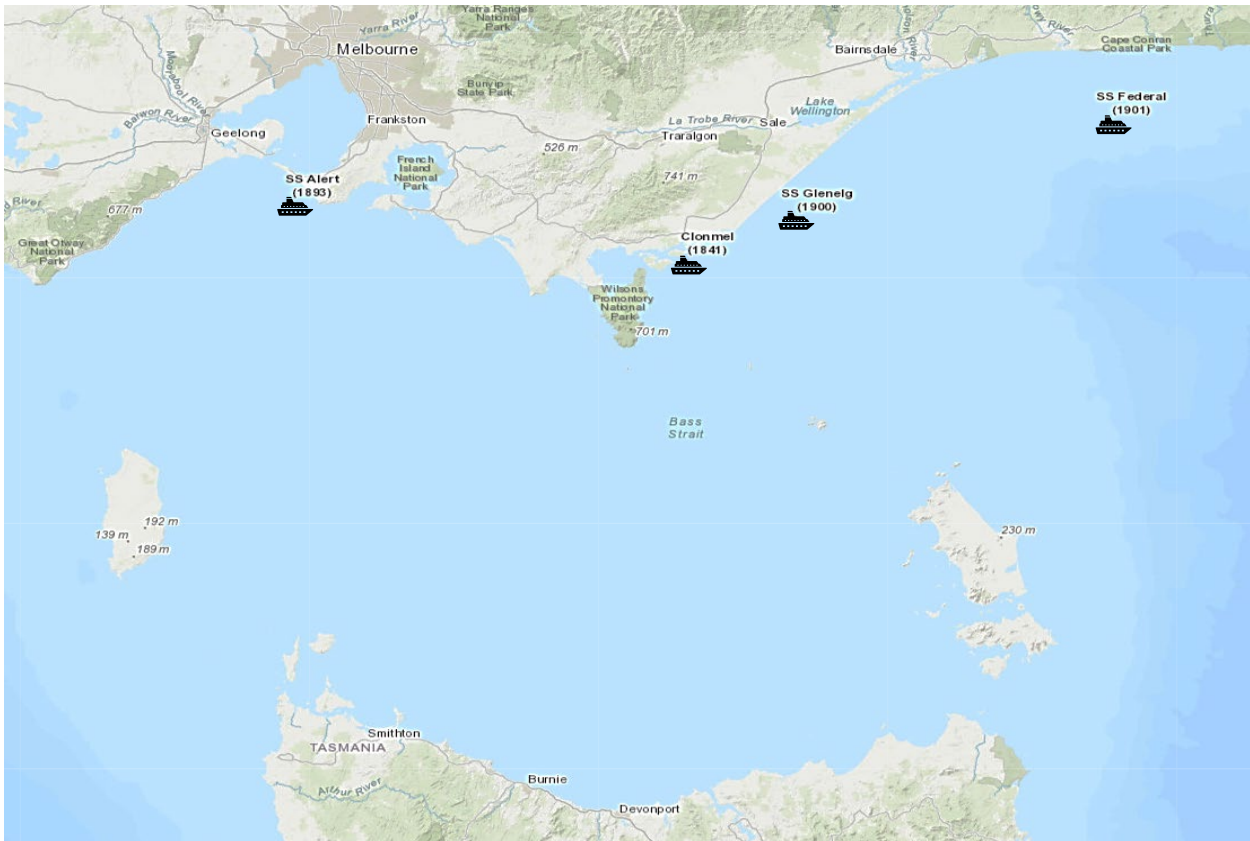
Figure 4-3: Indigenous Protected Areas Map - Australia 2023 (NIAA, 2023)

#### 4.4.2 Shipwrecks and other Historical Environments

Data on shipwrecks in the region indicates a significant number are present throughout Bass Strait and coastal Victoria and Tasmania. Figure 4-4 shows the shipwrecks that are recognised through the Protected Matters Search Tool (Earthstar Geographics, 2024), however, exact resting places for most of other wrecks in the region are unknown, some of these include:

- The wreck SS Glenelg - reported to be situated in close proximity to the pipeline, although estimates of its location vary from close to Lakes Entrance to being 40 nm west of Lakes Entrance
- The Norfolk, which also has conflicting locations (one report has it situated 30 nm from Lakes Entrance, while another records a location between Seaspray and Woodside). Several wrecks have been listed as 'lost Ninety Mile Beach'
- Beagle Marine Park contains two shipwrecks within its Multiple Use Zone, the SS Cambridge (1940) and the SS Queensland (1876)
- The wrecks Fear Not and Oberlin situated close to the shore at Hogan Island

- The wreck of Bulli lies almost intact in West Cove, Erith Island within the Kent Group
- A number of wreck locations in the Five Mile Bluff region, including an unidentified coaster (1843) and the Royal Oak



**Figure 4-4: Shipwrecks represented by the Protected Matters Mapping Tool (Earthstar Geographics, 2024)**

While it is important to be aware of the possibility of cultural artefacts within the vicinity of the pipeline, no sites of Aboriginal or non-Aboriginal significance (including shipwrecks) were evident along the pipeline route during pre-construction surveys conducted in September 2000 (Hydro Tasmania, 2001) and none have been raised through consultation. The Offshore TGP and its operation is therefore considered unlikely to have any impact upon values of heritage significance (Hydro Tasmania, 2001).

## 4.5 Socio-Economic Environment

A wide range of human activities occur in the waters of Bass Strait, including commercial oil and gas fields, shipping, commercial and recreational fishing, and other recreational activities.

**Commercial Fisheries** - Several commercial fisheries operate in the general vicinity of the Offshore TGP depending on the season, including the: Southern Bluefin Tuna Fishery, Eastern Tuna and Billfish Fishery, Eastern Skipjack Tuna Fishery, Small Pelagic Fishery, the Bass Strait Scallop Fishery (Central Zone) and the Southern Squid Jig Fishery. School whiting (*Sillago bassensis* and *S. flindersi*) and flathead (*Platycephalus* and *Neoplatycephalus spp.*) are the most significant commercial species.

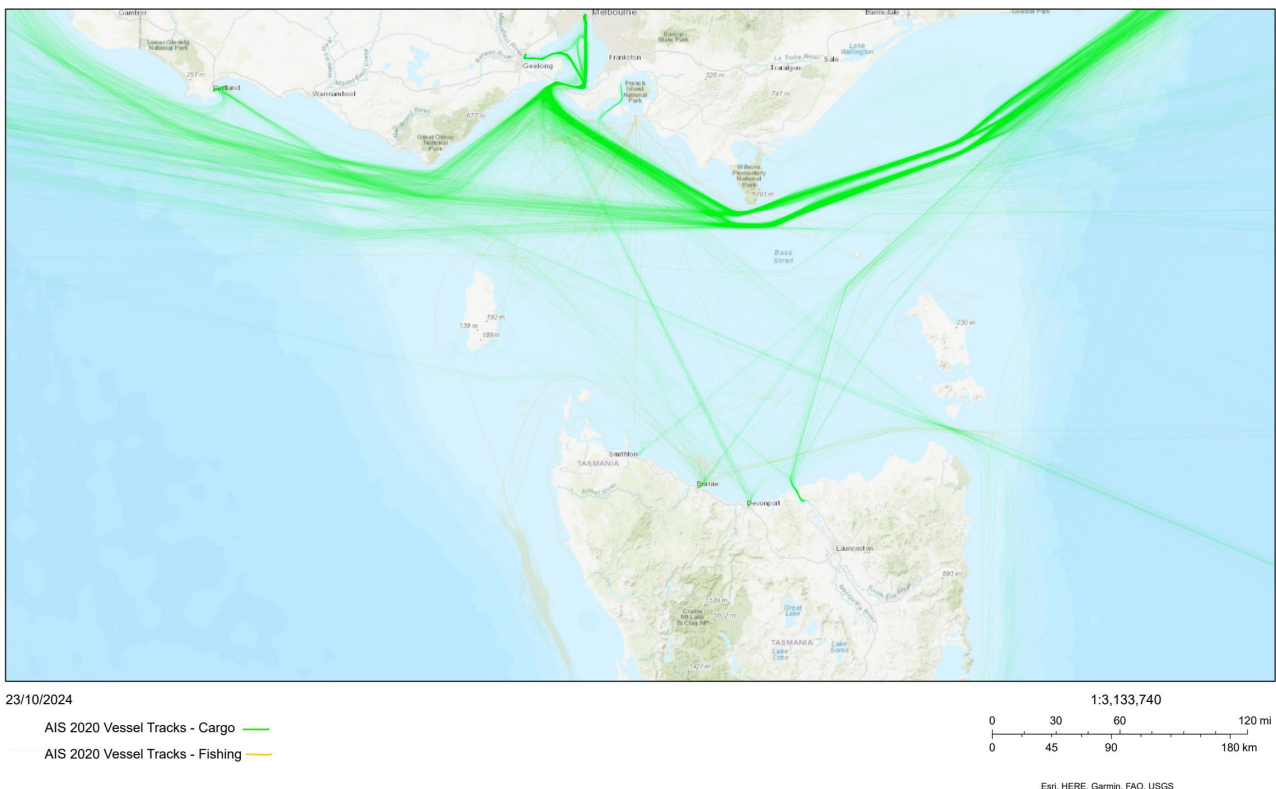
**Commercial shipping** - Bass Strait is one of Australia's busiest shipping areas, with passengers and freight being transported between the mainland and Tasmania as well as New Zealand. The highest volumes of shipping traffic travel in an east-west direction, with connections to Melbourne and Geelong. Substantial volumes of shipping traffic also occur between Melbourne/Geelong and Tasmania moving in a north-south direction (see Figure 4-5)

**Recreational activities** - Most recreational activities occur in nearshore environments, including fishing, boating and diving, whale watching and are often controlled by conditions within the open waters of the Strait. Several of the islands in the region are also available for visiting, although access may be controlled by permit systems managed by the Tasmanian Parks and Wildlife Service. Popular recreational activities offered by the Bass Strait islands include birdwatching, fishing and diving around reefs and shipwrecks.

**Oil and Gas Infrastructure** - The Gippsland Basin has been producing significant oil and gas resources since the 1960s and includes several operating fields. Petroleum permits have been issued for exploration and production within the central Bass Strait region, with the closest operating field located at least 3 km to the east of the Offshore TGP, these fields can be seen in Figure 2-4.

**Other infrastructure** - The Victorian shore crossing of the Offshore TGP is adjacent to existing pipeline easements or infrastructure, including EAPL/BHP pipeline, BASSLINK Interconnector and Indigo Cable. These have been outlined in Section 2.1.7. In pursuit of renewables, there is also area being proposed for offshore wind turbines that could intersect with the TGP.

Due to the depth and location of the Offshore TGP, and periodic nature of inspection and maintenance activities, Offshore TGP activities should pose minimal hindrance to socio-economic activities in Bass Strait.



**Figure 4-5: Shipping routes through Bass Strait (AMSIS, 2024)**

## 4.6 Matters of National Environmental Significance (MNES)

TGPPL reviewed the contents of the MNES report by identifying the MNES and other matters protected by the EPBC Act that could reasonably be considered to be within or near to the TGP route and OA, or potentially impacted within the EMBA shown in the oil spill modelled in Section 2.2.2.2.

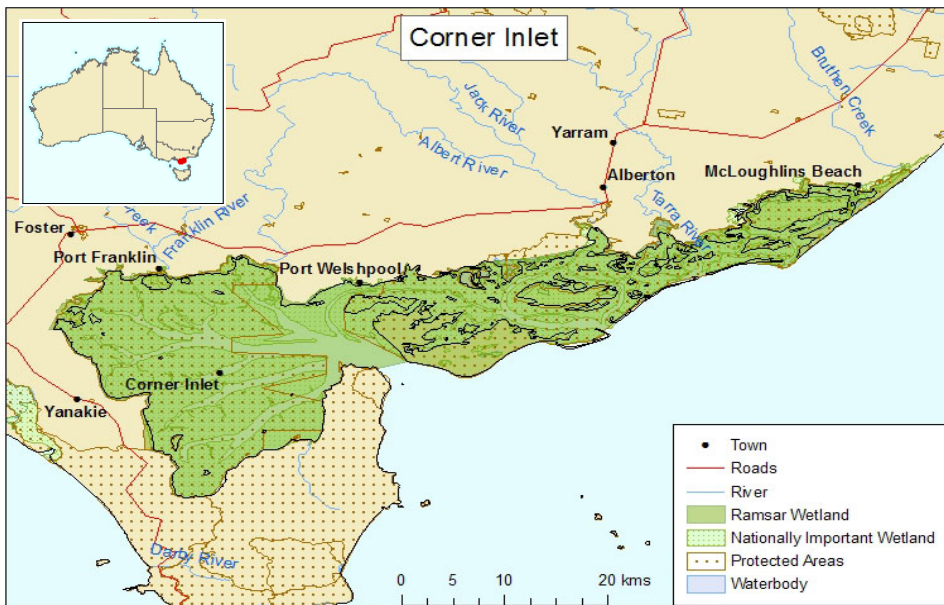
Table 4-4 summarise the matters of MNES overlapping the OA (Appendix C) and EMBA (Appendix B). The following sections further discuss these sensitivities to best identify the potential threats related to TGPPL Activities (or general petroleum activities). These identified threats are then discussed further with controls implemented by TGP described in Section 6.

**Table 4-4: Summary of Matters of National Environmental Significance potentially occurring within the OA and EMBA (identified by the EPBC Act Protected Matters Search Tool - Appendix B and Appendix C)**

| MNES  | OA | EMBA | EP Reference  |
|---|----|------|---------------|
| World Heritage Properties                     | 0  | 0    | -             |
| National Heritage Places                      | 0  | 0    | -             |
| Wetlands of International Importance (Ramsar) | 1  | 6    | Section 4.6.1 |
| Commonwealth Marine Area                      | 2  | 2    | Section 4.6.3 |
| Listed Threatened Ecological Communities      | 5  | 13   | Section 4.6.2 |
| Listed Threatened Species                     | 94 | 151  | Section 4.3.1 |
| Listed Migratory Species                      | 48 | 77   | Section 4.3.1 |

#### 4.6.1 Wetlands of International Importance (Ramsar Wetlands)

##### 4.6.1.1 Corner Inlet



**Figure 4-6: Corner Inlet Ramsar Wetland Location (DCCEEW, 2019a)**

The Corner Inlet Ramsar Site is located on the south-east coast of Victoria (Figure 4-6). It is bounded to the west and north by the South Gippsland coastline, in the south-east by a series of barrier islands and sandy spits lying end to end and separated by narrow entrances, and to the south by the hills of Wilsons Promontory.

The Corner Inlet Ramsar Site also meets six of the Ramsar criteria: 1, 2, 4, 5, 6 and 8 (as described in (DCCEEW, 2021a))

Corner Inlet is a very good example of a wetland enclosed by barrier islands in Victoria and contains the most extensive intertidal mudflats in Victoria. The area contains the only extensive bed of the Broad-leafed seagrass in Victoria. The islands of Corner Inlet, although not rich in plant diversity, are of high biogeographical significance as a result of their geological history and connectivity to

the mainland during ice ages. The islands also contain significant areas of saltmarsh and mangroves, both of which are communities of very limited distribution. These communities filter pollutants, stabilize sediments and protect the shoreline from erosion.

Corner Inlet provides breeding habitat for a variety of waterbirds, including several species listed as threatened at the State level and/or occurring in significant numbers and habitat for significant aggregations of waterbirds during post-breeding, and as a refuge during adverse environmental conditions. Corner Inlet regularly supports well over 20,000 waterbirds including species such as the Eastern Curlew, Curlew Sandpiper, Bar-tailed Godwit, and Double-banded Plover.

The site supports more than 390 species of marine invertebrates and 390 species of native flora, and as mentioned has a high diversity of bird species. Wading species benefit from the nature of the wetland specifically, with thirty-two wader species recorded. As the inlet provides extensive tidal flats that are exposed at low tide, they create important feeding areas for waders, this is reflected in the populations particular over winter as it is estimated that nearly 50 per cent of the overwintering migratory waders in Victoria occur in Corner Inlet.

The Corner Inlet Ramsar Site has regularly supported more than one per cent of the population of the Pied Oystercatcher, Sooty Oystercatcher, Pacific Gull, Fairy Tern, Red Knot, Red-necked Stint and Chestnut Teal.

Corner Inlet supports the nationally critically endangered Orange Bellied Parrot as well as several other vulnerable and endangered species, including the Growling Grass Frog and Australian Grayling. The Southern-right Whale, Leathery Turtle, Swift Parrot and Shy Albatross have all also been recorded at the site.

Corner Inlet provides important habitats, feeding areas, dispersal and migratory pathways, and spawning sites for numerous fish species.

Corner Inlet was used traditionally by Indigenous people and many archaeological sites including scarred trees, burial sites, artefact scatters, shell middens and camps have been found. Currently, the Ramsar site is used for biological conservation, ports with servicing facilities for off-shore oil and natural gas exploration, commercial fishing, recreational fishing, and other recreational activities. Diving is popular around the numerous shipwreck sites in Corner Inlet and around the barrier islands (DCCEEW, 2019a).

The site is protected as a Ramsar site by the Nooramunga and Corner Inlet Marine and Coastal Parks, and by part of it lying within the Corner Inlet Marine National Park (Section 4.6.6). In the context of the TGP operations and predicted extent of the EMBA, critical components (C)/processes (P) /services (S) that may be affected by a diesel spill event include seagrass, mangroves, saltmarshes and intertidal and subtidal waters (C1), waterbird breeding (P1), threatened species (S1) and fish abundance (S2) (DSEWPC, 2011)

West Gippsland Catchment Management Authority issued a *2014-2022 West Gippsland Waterways Strategy* that included the Corner Inlet site and created the *Corner Inlet Water Quality Improvement Plan 2013*. These work in with the federal EPBC Act for managing Ramsar sites.

#### 4.6.1.2 East Coast Cape Barren Island Lagoons



**Figure 4-7: East Cape Barren Island Lagoons Ramsar Site Location (DCCEEW, 2019b)**

The East Coast Cape Barren Island Lagoons (ECCBIL) Ramsar site is located on the east coast of Cape Barren Island, one of the Furneaux Group of islands which lie in Bass Strait to the north-east of Tasmania. The site extends from just north of Tar Point down to Jamieson's Bay and extends westwards from the coast for a distance varying from one to four kilometres.

Listed in 1982, the East Coast Cape Barren Island lagoons met criteria 1 and 3, (as described in (DCCEEW, 2021a)).

ECCBIL has a significant place in recent history of the Tasmanian Aboriginal community Cultural Heritage and is of spiritual and religious significance and is a regional example of a near natural coastal wetland. The sandy soils and low relief create a context for the development of wetlands and numerous shallow saline lagoons. The largest lagoon is Thirsty Lagoon located in the southern sector. It is a barred estuary connected by a narrow neck to Little Thirsty Lagoon. Most of the remaining lagoons are small un-named ephemeral water bodies that are not connected to the sea (DSEWPC, 2012a).

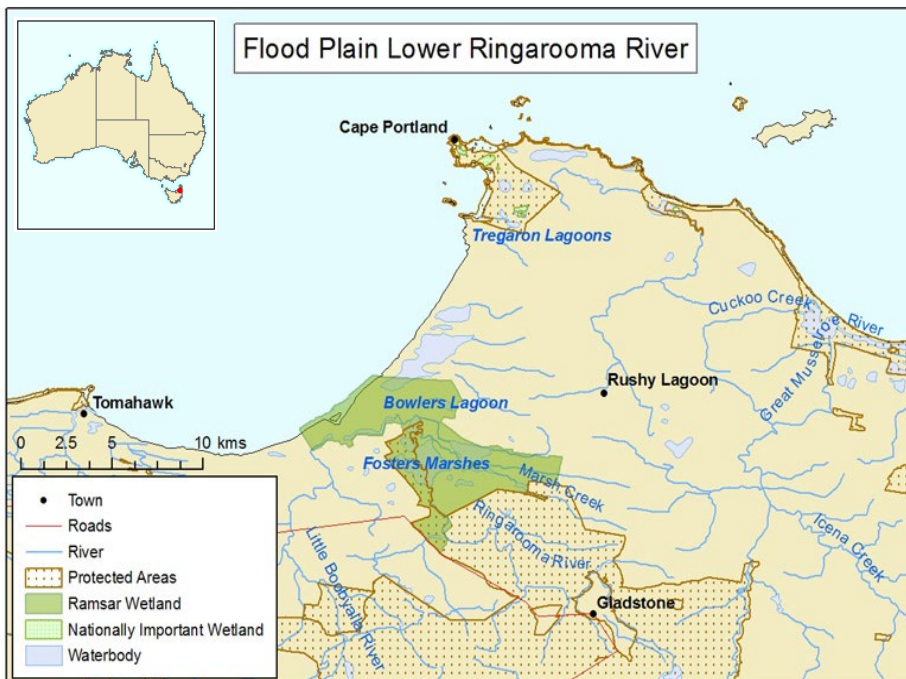
These wetlands are located on the east side of the Cape Barren Island (see Figure 4-7), located just outside the scope of the EMBA.

#### 4.6.1.3 Flood plain lower Ringarooma River

Located in the far north-east coast of Tasmania as show in Figure 4-8, between Cape Portland and Waterhouse Point. The site is situated on the sandy flood plain of the Lower Ringarooma River which encompasses extensive marshlands and a few shallow lagoons including Shantys Lagoon, Blueys Lagoon and Bowlers Lagoon. The Ringarooma River drains out into Ringarooma Bay which is located within the EMBA. The wetlands extend over 3500 hectares and vary in wetland type across this area.

The Flood plain lower Ringarooma River site meets four of the Ramsar criteria: 1, 2, 3, and 4 (as described by (DCCEEW, 2021a)).

The site has been included as the hydrology of this site is influenced by tidal flows, river flows and local groundwater. However, the bulk of the wetland area is above the tidal limit and is largely controlled by inflows from the Ringarooma River. Birds and wetland dependent species, including migratory and threatened species use the wetlands as a habitat. (DCCEEW, 2019c)



**Figure 4-8: Flood Plain Lower Ringarooma River Ramsar Wetland Location (DCCEEW, 2019c)**

#### 4.6.1.4 Gippsland Lakes

The Gippsland Lakes Ramsar Site is located in Victoria, south of the Eastern Highlands and to the east of the La Trobe Valley, see Figure 4-9. Covering a vast area, the lakes are a series of large, shallow, coastal lagoons approximately 70 km in length and 10 km wide, separated from the sea by sand dunes. The surface area of the lakes is approximately 364 km<sup>2</sup> and the three main water bodies are Lakes Wellington, Victoria and King (DCCEEW, 2019d).

The Gippsland Lakes Ramsar Site meets six of the Ramsar criteria: 1, 2, 4, 5, 6 & 8 (as described in (DCCEEW, 2021a)).

The Gippsland Lakes is a particularly good representative example of a natural or near-natural wetland, characteristic of the biogeographical region. It forms one of the largest coastal lagoon systems in the Drainage Division and contains a distinctive landscape of wetlands and flat coastal plains. The site supports a broad range of wetland types in close proximity to each other, including periodically inundated palustrine marshes, permanently inundated palustrine marshes, shallow lacustrine (lake) features, deep lacustrine features, lagoons with narrow inlets, and broad embayments. The site supports several nationally threatened wetland fauna species at various stages of their life cycle including two nationally threatened frog species, the vulnerable Australian Painted Snipe, a vulnerable fish species (the Australian Grayling) and three nationally vulnerable and endangered wetland-associated flora species.

The site supports habitat and conditions that are important for critical life cycle stages of a variety of wetland-dependent fauna species. The permanence of the main lakes and the relatively regular flooding of the adjacent wetlands mean that this wetland is an important drought refuge for many water birds and other aquatic species, including as permanent refuges and breeding sites for two threatened frog species.

The Gippsland Lakes have been identified as being of outstanding importance for waterbirds, regularly supporting more than 20,000 waterfowl. Waterbird species which are considered to have met the one per cent population threshold are: Red-necked Stint, Black Swan, Sharp-tailed Sandpiper, Chestnut Teal, Musk Duck, Fairy Tern and Little Tern.

Gippsland Lakes provides important habitats, feeding areas, dispersal and migratory pathways, and spawning sites for numerous fish species of direct and indirect fisheries significance. These fish have important fisheries resource values both within and external to the site. Currently, parts of the Lakes system are heavily used for commercial and recreational fisheries and boating activities, while

the immediate hinterland has been developed for agricultural use, and limited residential and tourism purposes (DCCEEW, 2019d).

The Lakes are protected as a Ramsar site by the Lakes National Park and the Gippsland Lakes Coastal Park (Refer Section 4.6.6). In the context of the TGP operations and predicted extent of the EMBA, critical components (C)/ processes (P)/ services (S) that may be affected by a diesel spill event include marine sub-tidal aquatic beds (C1), waterbird breeding (P2), threatened species (S1) and fisheries resource values (S2). The greatest threat identified that relates to the activities of TGP is vessel oil spill impact to direct oiling of wildlife (EGCMA, 2015). Oil spill management is discussed in Section 9.4.



**Figure 4-9: Gippsland Lakes Ramsar Site Location (DCCEEW, 2019d)**

#### 4.6.1.5 Logan Lagoon

Logan Lagoon is part of an extensive eastern Flinders Island parallel dune-coastal barrier system, stretching across 2257 hectares, the Ramsar site is located in the south-east corner of Flinders Island in Bass Strait, Tasmania, approximately six kilometres north-east of the township of Lady Barron (DSEWPC, 2012b). Like the East Coast Cape Barren Island Lagoon, the site falls just outside the scope of the EMBA as it is situated on the east coast of the Tasmanian Bass Strait islands.

Logan Lagoon Ramsar site meets five of the nine criteria; 1, 2, 3, 4, and (as described in (DCCEEW, 2021a)).

When full, the lagoon provides feeding and resting habitat for several migratory waders including the Red-necked Stint, Common Greenshank, Eastern Curlew, Bar-tailed Godwit and Double-banded Plover. The wetland is an important part of the East Asian - Australasian Flyway, and twenty migratory bird species listed under internationally agreements use the site. Currently, the primary use of the site is for conservation, education, research, and recreation such as walking, sightseeing, bird watching, off-road vehicle driving and beach fishing (DCCEEW, 2019e).

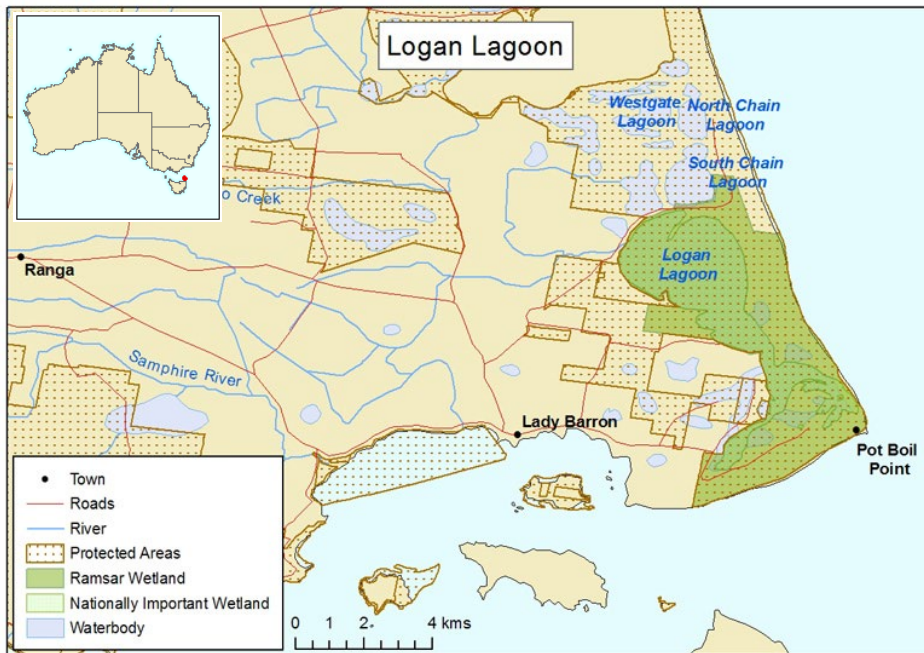


Figure 4-10: Logan Lagoon Ramsar Site Location (DCCEEW, 2019e)

#### 4.6.2 Threatened Ecological Communities

The communities described in detail below are more likely to be encountered or impacted by TGP activities, however a comprehensive list from Appendix B is also shown in Table 4-5 with key threats, and relevant conservation advice or recovery plans identified.

- Giant Kelp Marine Forests of South East Australia** – As of August 2012, these areas have been protected under the EPBC Act, as a threatened ecological community (TEC). Giant kelp (*Macrocystis pyrifera*) is the foundation species of the community, with other components including a large range of algae, reef associated fish and numerous invertebrates that shelter, feed and reproduce within the kelp (DSEWPaC, 2012)). Remaining populations occur along coastal Tasmania and Victoria and in small patches around the Kent Group. Giant kelp marine forests favour temperate southeast waters on rocky reefs, where conditions are cool and relatively nutrient rich. The Offshore TGP route passes through deeper waters and does not impact directly on any known populations.

There is currently no threat abatement plan for this ecological community.

- Littoral Rainforest and Coastal Vine Thickets of Eastern Australia** - is listed as a critically endangered TEC under the EPBC Act. The ecological community is a complex of rainforest and coastal vine thickets on the east coast of Australia influenced by its proximity to the sea; and provides habitat for over 70 threatened plants and animals and provides important stepping stones along the eastern Australian coast for various migratory and marine birds.

Littoral Rainforest is comprised of a complex of wet or monsoon tropical to warm temperate rainforests and coastal vine thickets, and notably it differs from other types of rainforest (such as lowland or upland rainforest) due to its location, typically located within two kilometres of the coast or adjacent to a large salt water body, such as an estuary (DoEE, 2019).

The rainforest is highly valued by Indigenous Australians, and a number of sites across the Littoral Rainforest are located within recognised Native Titles. Cultural artefacts have been found within parts of the forest and in Victoria, a women's sacred site and birthing place have been discovered. (DoEE, 2019).

Key threats to the rainforest are increased fragmentation from clearing of vegetation, degradation of abiotic factors (such as water, nutrients or soil, introduction and establishment of invasive species, and pollutants entering the ecological community that kill or inhibit growth of local species.

The Offshore TGP route does not impact directly on the closest occurrence of this TEC at Lakes Entrance, and offshore activities will not impact the ecological community directly.

- **Subtropical and Temperate Coastal Saltmarsh** - Is listed as a vulnerable TEC under the EPBC Act, and its known distribution includes the southern and eastern coasts of Australia. The Subtropical and Temperate Coastal Saltmarsh ecological community occurs within a relatively narrow margin along the Australian coast, within the subtropical and temperate climatic zones; and includes coastal saltmarsh occurring on islands within these climatic zones. The physical environment for the ecological community is coastal areas under regular or intermittent tidal influence (TSSC, 2013).

The ecological community consists mainly of salt-tolerant vegetation (halophytes) including: grasses, herbs, sedges, rushes and shrubs. Many species of non-vascular plants are also found in saltmarsh, including epiphytic algae, diatoms and cyanobacterial mats. The ecological community is inhabited by a wide range of infaunal and epifaunal invertebrates, and temporary inhabitants such as prawns, fish and birds (and can often constitute important nursery habitat for fish and prawn species). Insects are also abundant and an important food source for other fauna, with some species being important pollinators. The dominant marine residents are benthic invertebrates, including molluscs and crabs that rely on the sediments, vascular plants, and algae, as providers of food and habitat across the intertidal landscape (TSSC, 2013). The key threats affecting the ecological community include: clearing and fragmentation, invasive species, damage from recreational activities and pollution (including oil spills) (TSSC, 2013). The Offshore TGP route does not impact directly on any known communities.

**Table 4-5: Key Threats to relevant Threatened Ecological Communities within EMBA from MNES list (Appendix B)**

| Name   | Threatened Category   | Conservation Advice or Recovery Plan   | Key Threats (relevant to petroleum activities)  | Located within Offshore OA |
|--|-----------------------|--|---|----------------------------|
| Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria                     | Endangered            | Approved Conservation Advice (including Listing Advice) for the Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community (2018)   | Invasive species – although the advice discussed onshore invasive species of flora and fauna, which is unlikely to be introduced by TGP activities. | N                          |
| Giant Kelp Marine Forests of South East Australia  | Endangered            | Approved Conservation Advice for Giant Kelp Marine Forests of South East Australia (2012)  | Invasive species  | Y                          |
| Gippsland Red Gum ( <i>Eucalyptus tereticornis</i> subsp. <i>mediana</i> ) Grassy Woodland and Associated Native Grassland | Critically Endangered | Approved Conservation Advice for Gippsland Red Gum ( <i>Eucalyptus tereticornis</i> subsp. <i>mediana</i> ) Grassy Woodland and Associated Native Grassland (2008) and Threat abatement plan for disease in natural ecosystems caused by <i>Phytophthora cinnamomic</i> (2018) | None identified   | N                          |
| Littoral Rainforest and Coastal Vine Thickets of Eastern Australia   | Critically Endangered | Approved Conservation Advice for the Littoral Rainforest and Coastal Vine Thickets of Eastern Australia ecological community (2015) and National Recovery Plan for the Littoral Rainforest and Coastal   | None identified   | N                          |

| Name   | Threatened Category   | Conservation Advice or Recovery Plan  | Key Threats (relevant to petroleum activities) | Located within Offshore OA |
|--|-----------------------|---|--|----------------------------|
|  |                       | Vine Thickets of Eastern Australia Ecological Community (2019)  |  |                            |
| Natural Damp Grassland of the Victorian Coastal Plains | Critically Endangered | Approved Conservation Advice (including listing advice) for the Natural Damp Grassland of the Victorian Coastal Plains (2015) | None identified                                | N                          |
| Subtropical and Temperate Coastal Saltmarsh            | Vulnerable            | Conservation Advice for Subtropical and Temperate Coastal Saltmarsh (2013)  | Oil spills                                     | N                          |

### 4.6.3 Commonwealth Marine Areas

Six marine regions have been identified in Commonwealth waters around Australia. The EMBA lies within the South-east Marine Region. The 2013 South-east Commonwealth Marine Reserves Network Management Plan expired on 30 June 2023, during the renewal process of the EP, Parks Australia is preparing a new management plan for the South-east Network.

The key conservation values of the South-east Marine Region are:

- Features with high biodiversity and productivity, such as the east Tasmania subtropical convergence zone, Bass Cascade, Upwelling East of Eden, Seamounts south and east of Tasmania and Bonney Upwelling.
- Breeding and resting areas for Southern-right Whale.
- Migration areas for Blue, Fin, Sei, Southern-right and Humpback Whales. Foraging areas for Australian Sea-lion, White Shark, Harrison's Dogfish, Killer and Sei Whales, Australasian Gannet, Fairy Prion, Black-faced Cormorant, Little Penguin, Crested Tern, and several species of seal, albatross, petrel, shearwater and gull.
- Wrecks of MV City of Rayville, SS Cambridge and ketch Eliza Davies.
- 10 provincial bioregions and 17 seafloor types are represented in the network (DoE, 2015)

### 4.6.4 Key Ecological Features

Key Ecological Features (KEF) are elements of the Commonwealth marine environment that are considered to be of regional importance for either a region's biodiversity or its ecosystem function and integrity. KEFs are not matters of national environmental significance (Appendix B) and have no legal status in their own right. However, they are components of the Commonwealth marine area. There was one KEF that was likely to occur within the EMBA of TGP Operations.

**The Upwelling East of Eden** is defined as a key ecological feature as it is an area of high productivity and aggregations of marine life. Dynamic eddies of the East Australian Current cause episodic productivity events when they interact with the continental shelf and headlands. The episodic mixing and nutrient enrichment events drive phytoplankton blooms that are the basis of productive food chains including zooplankton, copepods, krill and small pelagic fish. The upwelling supports regionally high primary productivity that supports fisheries and biodiversity, including top order predators, marine mammals and seabirds. This area is one of two feeding areas for Blue Whales and Humpback Whales, known to arrive when significant krill aggregations form. The area is also important for seals, other cetaceans, sharks and seabirds. This feature displays seasonal and annual variation, and is present along the eastern Victorian and southern NSW coasts (DoE, 2015).

#### 4.6.5 Australian Marine Parks

**Beagle Australian Marine Park (AMP)** - Declared in June 2007, covers 2,928 km<sup>2</sup> of Commonwealth Ocean territory, and incorporates the Kent Island Group, Hogan Island Group and Curtis Island Group. It is situated within shallow topography, mostly at depths of 46 m to 77 m, with the north-western edge abutting Victorian waters to the south-east of Wilson’s Promontory (Parks Australia, 2023). The Offshore TGP is oriented between the Hogan and Kent Island Groups, traversing the entire marine reserve in a north-south direction. The Marine Reserve is traversed by the Offshore TGP between KP 110 and KP 170 (the marine parks can be seen in Figure 4-11). The Reserve is zoned for ‘Multiple Use’ (category VI under the classification system established by the International Union for Conservation of Nature (IUCN) and adopted by the Commonwealth government), however it should be noted that at the time of the EP the South-East marine park zoning is under review as the 2013 [South-east Commonwealth Marine Reserves Network Management Plan](#) expired on 30 June 2023, therefore zones may change in the next update. This should have minimal impact on the activities or processes that TGPPL currently follow to initiate activities in the region due to approvals given prior to the plan as the pipeline is a prior use right.

The Reserve is effectively a managed resource protected area that is administered to ensure long-term protection and maintenance of biological diversity, but with a sustainable flow of natural products and services to meet community needs. The general zoning allows for a number of activities including mining exploration and development activities, select commercial fishing methods, recreational and charter fishing, shipping and general transit, scientific research and commercial tourism. Demersal trawl, scallop dredging, mesh netting and Danish seine commercial fishing methods, however, are not permitted (DoE, 2015).

**Table 4-6: Beagle AMP: SE Commonwealth Marine Reserves Network Management Plan 2013-2023 (DoE, 2015)**

|  |   |         |         |                   |
|--|---|---------|---------|-------------------|
| <b>Proclaimed</b>  | 28 June 2007  |         |         |                   |
| <b>IUCN category assigned by this Management Plan and reserve management zone name</b> | IUCN VI—Multiple Use Zone   |         |         |                   |
| <b>Assigned zones in reserve:</b>  | IUCN Ia   | IUCN II | IUCN IV | IUCN VI           |
|  |   |         |         | Multiple Use Zone |
| <b>Depth of reserve below seabed</b>   | 100 m   |         |         |                   |
| <b>Total area</b>  | 2,928 km <sup>2</sup> (292 800 ha)  |         |         |                   |
| <b>Major conservation values</b>   | <p>Ecosystems, habitats and communities associated with:</p> <ul style="list-style-type: none"> <li>the Southeast Shelf Transition.</li> </ul> <p>and associated with sea-floor features:</p> <ul style="list-style-type: none"> <li>basin</li> <li>plateau</li> <li>shelf</li> <li>sill</li> </ul> <p>Important migration and resting on migration area for:</p> <ul style="list-style-type: none"> <li>Southern-right Whale</li> </ul> <p>Important foraging area for:</p> <ul style="list-style-type: none"> <li>Australian Fur Seal</li> <li>Killer Whale</li> <li>Shy Albatross, Australasian Gannet, Short-tailed Shearwater, Pacific and Silver Gulls,</li> <li>Crested Tern, Common Diving Petrel, Fairy Prion, Black-faced Cormorant and Little Penguin</li> <li>White Shark</li> </ul> <p>Cultural and heritage sites:</p> <ul style="list-style-type: none"> <li>the wreck of the steamship SS Cambridge</li> <li>the wreck of the ketch Eliza Davies</li> </ul> |         |         |                   |

|   |   |
|---|---|
| <b>Location</b>                           | The Beagle Commonwealth Marine Reserve lies entirely within Bass Strait, with its north-western edge abutting Victorian waters south-east of Wilson’s Promontory. It is a shallow-water reserve surrounding a collection of Bass Strait islands.  |
| <b>General description of the reserve</b> | <p>The Beagle Commonwealth Marine Reserve represents an area of shallow continental shelf ecosystems in depths of about 50–70 m that extends around south-eastern Australia to the east of Tasmania. The sea floor that it covers formed a land bridge between Tasmania and Victoria during the last ice age 10 000 years ago.</p> <p>Its boundary encloses Tasmania’s Kent Group Marine Reserve and the Hogan and Curtis Island groups. Nearby to the north-east is Victoria’s Wilsons Promontory Marine National Park.</p> <p>The reserve encompasses the fauna of central Bass Strait, which is expected to be especially rich based on studies of several sea floor–dwelling animal groups. Its ecosystems are similar to those documented for the deeper sections of the Kent Group Marine Reserve, especially those based around habitats of rocky reefs supporting beds of encrusting, erect and branching sponges, and sediment composed of shell grit with patches of large sponges and sparse sponge habitats.</p> <p>Islands encompassed by the reserve and nearby islands support important breeding colonies for many seabirds and for the Australian Fur Seal. The waters of the reserve provide an important foraging area for those species breeding nearby. The rich marine life also attracts top predators, such as the White Shark and Killer Whales.</p> <p>The SS Cambridge, a British freighter, which lies in the reserve to the east of Wilson’s Promontory, was sunk in 1940 by a WWII mine.</p> <p>The trading ketch Eliza Davies, which lies in the reserve to the east of Wilson’s Promontory, sunk under tow in 1924.</p> |

#### 4.6.6 National Parks and Reserves

Several areas adjacent to or within Victorian and Tasmanian State waters have been declared as National Parks or Marine Protected Areas. These are shown in Figure 4-11 and include the following reserves within the vicinity of the Offshore TGP:

**The Lakes National Park (Tatungalung Country)** – One of the jointly managed parks with Parks Victoria and the Gunaikurnai people and recognised as an internationally significant wetland for migratory bird species. For the indigenous community, many of these species are considered totem species, and there are many rare or endangered species found throughout the year. The Lakes National Park is a bushland that covers 2389 ha located in central Gippsland with prominent geographical features of the peninsula of Sperm Whale Head, Rotamah and Little Rotamah Islands. The main lakes of the park are Lake Victoria and Lake Reeve. The area is managed to support recreational activities, such as walking trails, kayaking, sailing, bird watching and educational group camping (Board, Gunaikurnai Traditional Owner Land Management, 2018).

The Gippsland Lakes are a group of large coastal lagoons in eastern Victoria, separated from the sea by sand dunes and fringed on the seaward side by Ninety Mile Beach. The main lakes - Wellington, Victoria and King cover an area of 340 km<sup>2</sup> and have a shoreline of 320 km. The Gippsland Lakes receive water from six major rivers, are subject to dynamic hydrological and tidal processes and are surrounded by a complex mix of land use including agriculture, fisheries, urban development and tourism (Board, Gunaikurnai Traditional Owner Land Management, 2018). The largest of the rivers are the Latrobe River and the Avon River (flowing into Lake Wellington), and the Mitchell River, Nicholson River and Tambo River (flowing into Lake King). The system is linked to the sea by an artificial entrance near the eastern end, opened in 1889, where the town of Lakes Entrance is now situated (Parks Victoria, 1999)

Gippsland Lakes Coastal Park is a narrow coastal reserve covering 17,688 ha along approximately 90km of Ninety Mile Beach from Seaspray to Lakes Entrance. The Lakes National Park contains large areas of diverse and relatively undisturbed flora and fauna communities representative of the inner barrier of the Gippsland Lakes system. Gippsland Lakes Coastal Park takes in extensive coastal dune systems, woodlands and heathlands, as well as water bodies such as Lake Reeve and Bunga Arm. The Gippsland Lakes system is listed under the Convention on Wetlands of International Importance (Ramsar), they provide important feeding, resting and breeding habitat for approximately 80 waterbird species, and the lakes, and associated swamps

and morasses, regularly support approximately 40,000 to 50,000 waterbirds (Parks Victoria, 1999).

Clydebank Morass, Macleod Morass and Jones Bay (within Lake King) support many species of migratory waders. Lake Wellington, Lake Victoria and Lake King support migratory seabirds, including the Little Tern and Fairy Tern, as well as a range of other waterfowl. Lake Reeve provides significant habitat for several migratory waders and is listed as one of the five most important areas for shorebirds in Victoria. Bunga Arm supports breeding populations of threatened species e.g. Little Tern, Fairy Tern, Hooded Plover and White-bellied Sea-eagle (Parks Victoria, 1999).

The history of the area contains both indigenous artefacts and remnants of the shell middens, as well as evidence of the changes from European settlement. This includes remains of equipment and buildings used in the construction of the permanent entrance to the Park include steel rails on timber sleepers, a jetty, remains of a pier, th two buildings at Entrance Bay, and a three-legged crane. These are parts of the New Works Hisotric Complex listed on the Victorian Heritage Register under the provisions of the Heritage Act. Similar relics on the eastern side of the entrance managed by the Shire of East Gippsland include a World War II fighter plane that crashed into Lake Reeve, and the shipwreck *Trinculo* which was beached in 1858 (Board, Gunaikurnai Traditional Owner Land Management, 2018).

The far south-western boundary of the park is located approximately 100 m north-east of the Offshore TGP commencement point.

**Ninety Mile Beach Marine National Park** – Is located 550 m southwest of Seaspray, Victoria and is managed by Parks Victoria. The Park covers 2750 ha and stretches south-west along 5 km of coastline and 3 NM offshore to the boundary of Victorian waters. The park is recognised as an internationallyt significant sandy environment recognised for the high diversity of marine invertebrates.

Marine habitat consists of sandy beach, sub tidal soft sediment and 8 ha of low profile calcarenite reef offshore that support the variety of invertebrates including colourful sponge gardens. The long sandy beach of the the Park is frequented by a number of threatened shorebird species including the Hooded Plover (*Thinornis rubricollis*), Little Egret (*Egretta garzetta*), Little Tern (*Sterna albifrons sinensis*), Royal Spoonbill (*Platalea regia*) and Whiskered Tern (*Chlidonias hybridus*). The area contains diverse fish species, with schools of pelagic fish including pike, school whiting and snapper common to the area. The area is also a nursery and feeding ground for Great White Sharks (*Carcharodon carcharias*) (Parks Victoria, 2006a).

The park is commonly used for a variety of recreational activities, including boating and water sports, diving and snorkelling, dog walking, horse riding, tourism and walking.

The Park is located approximately 2 km west of the Offshore TGP.

**Corner Inlet and Nooramunga Marine and Coastal Parks** - Corner Inlet Marine and Coastal Park is part of an Aboriginal cultural landscape that includes the traditional Country of the Gunaikurnai Peoples. Nooramunga Marine and Coastal Park is approximately 20,170 ha and Corner Inlet Marine and Coastal Park covers around 28,500 ha and are situated 200km southeast of Melbourne. These Parks are protected from Bass Strait by sand barrier islands and Wilsons Promontory. Corner Inlet and Nooramunga consist of shallow marine waters, intertidal mudflats and a series of sand islands. The park includes one of 64 wetland areas in Australia listed under the Ramsar Convention. This internationally listed wetland protects 67,186ha of diverse habitats, including coastal woodland, vast mangrove communities, saltmarsh areas, intertidal zones and unique marine values such as Broadleaf Seagrass forests. (Parks Victoria, 2024a). Seaward of the mangroves are extensive areas of intertidal mud and sand flats which provide food for thousands of migratory wading birds each year.

Thirty-two species of migratory waders have been recorded, including the largest concentrations of Bar Tailed Godwit and Great Knot in southeastern Australia (Parks Victoria, 2024a). In summer, the ocean beaches and sand spits are also used as nesting sites by shorebirds like the Pied Oystercatcher, Crested Tern, Caspian Tern, Fairy Tern, Hooded Plover and the endangered Little Tern. Fringing the saltmarshes and mangroves on the mainland and islands are stands of swamp paperbark and coast tea-tree, and further inland woodlands of

coast banksia and manna gum. These are home for a variety of animals including the New Holland Mouse, Swamp Antechinus, Orange-bellied Parrot, Ground Parrot and White-bellied Sea Eagle (DoEE, 2017a).

The Corner Inlet Marine National Park is located north and east of Wilson's Promontory adjacent to the southern shores of Corner Inlet. The National Park protects large areas of seagrass including the only extensive *Posidonia australis* meadow in southern Australia. Amongst the seagrass live over 300 marine invertebrates including crabs, seastars, sea snails, squid and many fish including pipefish, stingrays, flathead, whiting and flounder. The seagrass and surrounding marshes are particularly important for international migratory birds such as the Eastern curlew (Parks Victoria, 2005). The area has been listed as part of the Corner Inlet Ramsar Site.

The park has long been part of the sacred Country of Yiruk for the Gunai / Kurnai and Wamoom for the Boonwurrung Indigenous people. Seascapes of the park and surrounding landscapes and waters are culturally and spiritually significant to relevant Indigenous communities (Parks Victoria, 2005).

The parks are used for several recreational activities, notably fishing and boating, hunting and camping.

**Wilson's Promontory Marine and National Park** - Is Victoria's largest Marine Protected Area at 15,550 ha and is located around the southern tip of Wilson's Promontory. There is a diversity of marine life including octopus, sharks and rays. It is a popular location for recreational divers particularly around the sponge gardens. The offshore islands support many colonies of fur seals and oceanic birds such as Little Penguins, Fairy Prions, Silver Gulls and Pacific Gulls (Parks Victoria, 2024b).

Wilson's Promontory Marine National Park is assigned the International Union for the Conservation of Nature and Natural Resources (IUCN) Category II of the United Nation's List of National Parks and Protected Areas. Category II areas are managed primarily for ecosystem protection and recreation (Parks Victoria, 2006b). This terrestrial park is important for its range of plants and animals, including many threatened species including the New Holland Mouse, Ground Parrot and White-bellied Sea Eagle. Coastal features include expansive intertidal mudflats, sandy beaches and sheltered coves interrupted by prominent headlands and granite cliffs in the south, backed by coastal dunes and swamps.

The avifauna recorded for Wilson's Promontory includes around half of all Victorian bird species. Significant species of migratory wading birds feed on the tidal mudflats of Corner Inlet within and adjoining the park. The offshore islands have breeding and roosting sites for sea birds, including multiple species of Short-tailed Shearwaters (Parks Victoria, 2002).

Indigenous tradition indicates that the waters surrounding Wilson's Promontory are integral to the dreaming and culture of the Gunai / Kurnai and Boonwurrung Indigenous people. Indigenous tradition indicates that the planning area is part of the sacred Country of Yiruk for the Gunai / Kurnai people, and Wamoom for the Boonwurrung people (Parks Victoria, 2006b).

These parks are popular tourist destination due to its coastal scenery and diverse natural environments. Tourist activities include walking, camping, sightseeing, viewing wildlife, fishing, boating, diving, sea kayaking and surfing.

**The Kent Group National Park and Marine Reserve** – A terrestrial park managed by the Parks and Wildlife Service of Tasmania. The islands were part of the original land bridge that connected what we now know as Tasmania and Victoria, allowing the movement of people and animals over 10,000 years ago. There are three major islands (Deal, Dover and Erith), two minor islands (North East and South West) and Judgement Rocks incorporated into the national park. The Offshore TGP is oriented in close proximity to South West Island and Judgement Rocks, with KP 130.7 positioned approximately 10 km west of the park boundary. Breeding seabird colonies are large, particularly on the two small islets known as North East and South West islands. Common Diving Petrels, Short-tailed Shearwaters, Little Penguins, Pacific Gulls, Sooty Oystercatchers and cormorants are the primary inhabitants as are the Little Tern (*Sterna albifrons sinensis*), endangered under Tasmanian legislation, and the Fairy Prion (*Pachyptila turtur subantarctica*) listed as vulnerable under the EPBC Act (Parks and Wildlife Services

Tasmania, 2005). Judgement Rocks is also an important Australian Fur Seal (*Arctocephalus pusillus*) breeding colony, being the largest within Tasmanian waters (Tasmania Parks and Wildlife Service, 2020). However, the distance of approximately 10 km is expected to buffer nesting sites from Offshore TGP activities.

The National Park's most prominent legacy was built in 1848 – a 22m tall lighthouse was Australia's first offshore island lighthouse, however it is now deactive since 1992 due to it's height above sea level regularly shrouding the light in. The Deal Island lighthouse is one of the most important light stations in Australia and is on the Register of the National Estate, as well as the Tasmanian Heritage Register cloud (Tasmania Parks and Wildlife Service, 2020).

Below the waterline of the national park, the Kent Group Marine Reserve surrounds the national park, protecting a diverse array of kelp, and an extraordinarily high number of fish species – both the result of the convergence of three ocean currents.

The Kent Group Marine Reserve is also managed by the Parks and Wildlife Service of Tasmania, extends 3 NM (about 5.6 km) offshore from the main islands of the Kent Group, and includes a Habitat Protection Zone (restricted take) and Sanctuary Zone (no take). The submarine topography surrounding these islands is dominated by massive granite blocks interspersed with clefts, ledges and caverns. The diversity in fish species is considered unusually high given the proximity to more homogenous substrates across the Bass Strait. It is considered unique in faunal assemblage and of high scientific value, partly due to its unique biogeographical location at the convergence of the three marine biogeographical regions. The Sanctuary Zone covers the western part of the Kent Group, including Dover and Erith Islands and Murray Passage, as well as part of the western coast of Deal Island. The two steamship wrecks Bulli and Karitane are in shallow water in West Cove and Squally Cove respectively and are an added highlight of the area (Tasmania Parks and Wildlife Service, 2024).

The Kent Group national park and marine reserves facilitate fishing, snorkelling and scuba among many other recreational activities. Due to the remote location, access is only available via chartered boat or for highly experienced and well-equipped sea-kayakers.

The Marine Reserve lies 23 km east of the Offshore TGP.

Several other islands lying about 10 km to 25 km from the Offshore TGP are listed as nature reserves under the Nature Conservation Act 2002 (Tasmania). They include: West Moncoeur Island, East Moncoeur Island, Bass Pyramid, Curtis Island, Devils Tower, Tenth Island and Wright Rock. The islands not only provide resting sites from foraging, but also serve as breeding sites for some species of birds and, in some cases, for seals.

All wildlife is protected by State or Commonwealth laws within declared nature reserves. The Offshore TGP route was originally chosen to minimise impacts on these sensitive areas, with the only area in direct contact with the Offshore TGP being the Beagle AMP. Management Guidelines, to ensure National Parks, Marine Reserves and all environmentally significant areas remain protected, are outlined in Section 6.

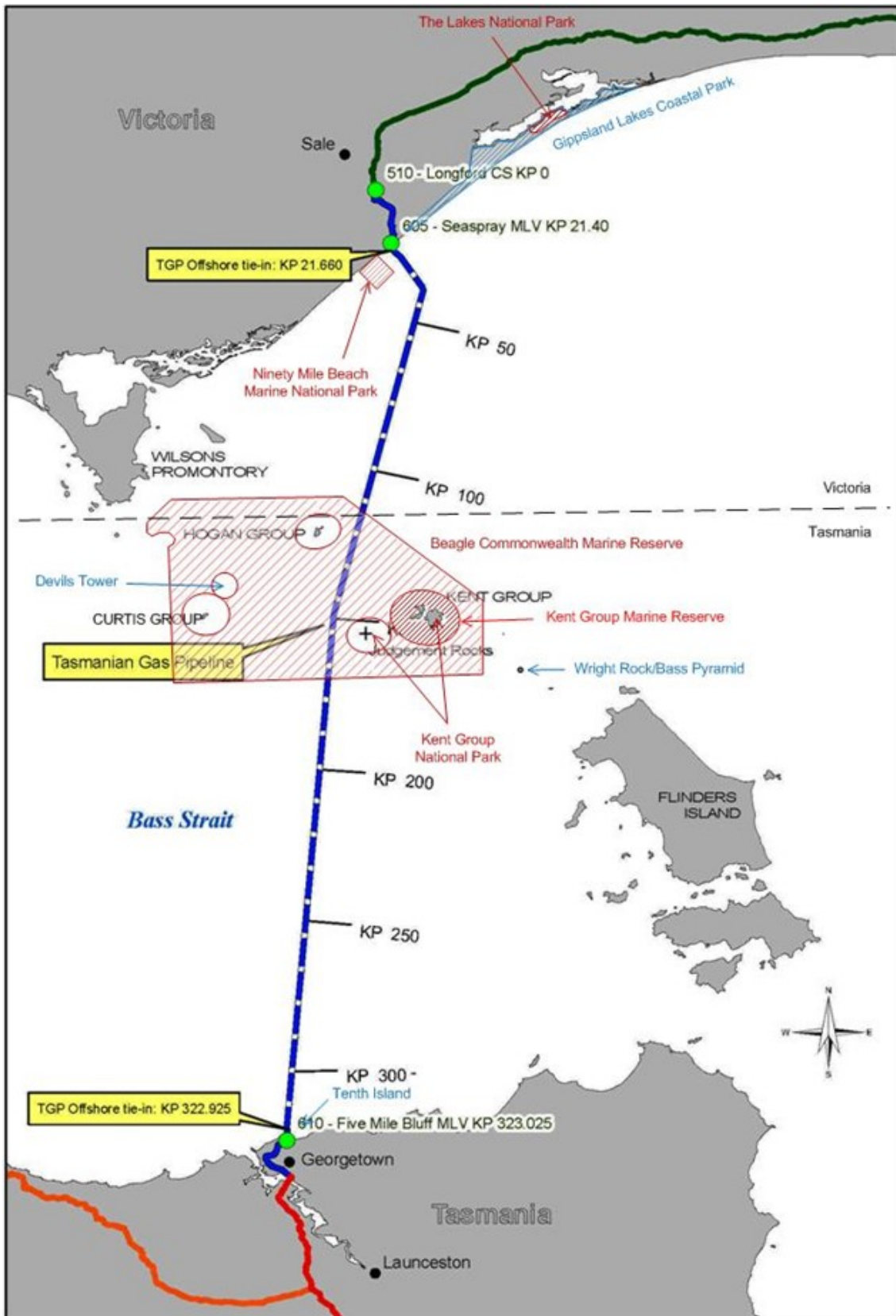


Figure 4-11: Environmentally Significant Areas along the Offshore TGP route

## 5. ENVIRONMENTAL MANAGEMENT FRAMEWORK

The environmental management of the Offshore TGP will be guided by this Offshore EP, AS/NZS ISO 14000 and the environmental policies of PIMS / TGPPL and its contractors.

AS / NZS 2885.1:2018, Clause 2.5 also requires the threats to the environment from each part of the life cycle of the pipeline to be identified and control measures implemented so that the risks to the environment are reduced to an acceptable level.

### 5.1 Environmental Risk Management Process

TGPPL has undertaken an environmental risk assessment (ERA) to identify potential environmental risks associated with operation, inspection and maintenance of the Offshore TGP to ensure that identified risks are reduced to ALARP and will be of an acceptable level consistent with TGPPL and industry standards. The environmental risk management process is outlined in Section 5.1.2.

This section of the Offshore EP only addresses the environmental risk management process however, the overall TGP Risk Management process is a whole of life process conducted during the three project phases of design, pre-commissioning, post-commissioning and continuing through ongoing operations and eventually de-commissioning. The process incorporates a range of activities to ensure that all risks to people, the facilities, environment and continuity of supply are identified and managed to be ALARP and acceptable.

#### 5.1.1 Definitions

The following definitions in Table 5-1 are relevant to the ERA and management process. Where not specifically referenced, the definitions are from AS/NZS ISO 31000: 2009 – Risk Management – Principles and Guidelines.

**Table 5-1: Definitions for Environmental Risk Assessment Terminology**

| Term                        | Definition  |
|-----------------------------|---|
| <b>Consequence</b>          | Outcome of an event affecting objectives. An event can lead to a range of consequences, and a consequence can be certain or uncertain and can have positive or negative effects on objectives. Consequences can be expressed qualitatively or quantitatively. Initial consequences can escalate through knock-on effects. |
| <b>Control</b>              | Measure that is modifying risk, and may include any process, policy, device, practice, or other actions which modify risk.  |
| <b>Environmental aspect</b> | Element of an organization's activities or products or services that can interact with the environment (AS/NZS ISO 14001: 2004).  |
| <b>Environmental impact</b> | Any change to the environment or a component of the environment, whether adverse or beneficial, wholly or partly resulting from an organisation's environmental aspects (AS/NZS ISO 14001: 2004).   |
| <b>Event</b>                | Occurrence or change of a particular set of circumstances. An event can sometimes be referred to as an "incident" or "accident", and an event without consequences may be referred to as a "near miss".   |
| <b>Inherent risk</b>        | Is essentially the risk prior to risk treatment, i.e. without any mitigation measures / management controls in place.   |
| <b>Likelihood</b>           | Chance of something happening, whether defined, measured or determined objectively or subjectively, qualitatively or quantitatively, and described using  |

| Term                           | Definition  |
|--------------------------------|---|
|                                | general terms or mathematically (such as a probability or a frequency over a given time/period).  |
| <b>Level of risk</b>           | Magnitude of a risk or combination of risks, expressed in terms of the combination of consequences and their likelihood.  |
| <b>Monitoring</b>              | Continual checking, supervising, critically observing or determining the status in order to identify change from the performance level required or expected. Monitoring can be applied to a risk management framework, risk management process, risk or control.  |
| <b>Residual risk</b>           | Risk remaining after risk treatment.  |
| <b>Review</b>                  | Activity undertaken to determine the suitability, adequacy and effectiveness of the subject matter to achieve established objectives. Review can be applied to a risk management framework, risk management process, risk or control.   |
| <b>Risk</b>                    | Effect of uncertainty on objectives.  |
| <b>Risk analysis</b>           | Process to comprehend the nature of risk and to determine the level of risk.  |
| <b>Risk assessment</b>         | The overall process of risk identification, risk analysis and risk evaluation.  |
| <b>Risk criteria</b>           | Terms of reference against which the significance of a risk is evaluated.   |
| <b>Risk evaluation</b>         | Process of comparing the results of risk analysis with risk criteria to determine whether the risk and/or its magnitude is acceptable or tolerable.   |
| <b>Risk identification</b>     | Process of finding, recognizing and describing risks.   |
| <b>Risk management</b>         | Coordinated activities to direct and control an organization with regard to risk.   |
| <b>Risk management process</b> | Systematic application of management policies, procedures and practices to the activities of communicating, consulting, establishing the context, and identifying, analysing, evaluating, treating, monitoring and reviewing risk.  |
| <b>Risk source</b>             | Element which alone or in combination has the intrinsic potential to give rise to risk.   |
| <b>Risk treatment</b>          | Process to modify risk. Risk treatment can involve: avoiding the risk by deciding not to start or continue with the activity that creates the risk; taking or increasing risk in order to pursue an opportunity; removing the risk source; changing the likelihood; changing the consequences; sharing the risk with another party or parties (including contracts and risk financing); and retaining the risk by informed decision. Risk treatments that deal with negative consequences are sometimes referred to as “risk mitigation”, “risk elimination”, “risk prevention” and “risk reduction”. |

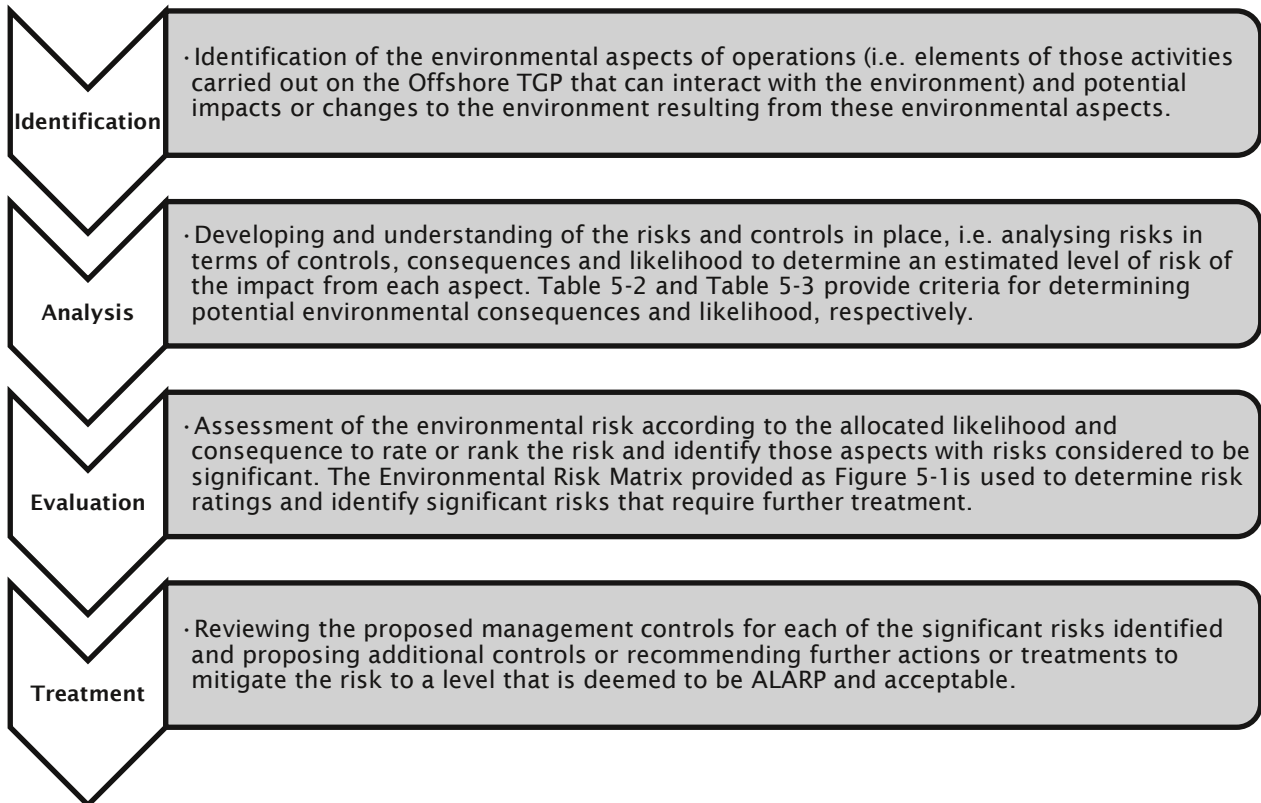
### 5.1.2 Environmental Risk Management Model

Environmental risk assessment and management for this Offshore EP has been undertaken using a methodology that is consistent with the approach outlined in the following standards and guidelines:

- AS/NZS ISO 14001: 2004 - Environmental Management Systems- Requirements with Guidance for Use
- AS/NZS 2885.1: 2018 - Pipelines - Gas and Liquid Petroleum, Part 1 – Design and Construction

- AS/NZS 31000: 2009 - Risk Management – Principles and Guidelines
- HB 203: 2012 – Managing environment-related risk

The model used to evaluate and manage environmental risks potentially resulting from Offshore TGP operation and associated inspection and maintenance activities comprises the following main components:



It should be noted that, although AS/NZS 2885.1 details a risk management process specific to pipelines, a more general ERA process was adopted to more effectively address environmental risks associated with pipeline operation, inspection and maintenance activities in the marine environment. Therefore, although there are some similarities, the consequence, likelihood and risk matrix tables provided below (Table 5-2, Table 5-3 and Figure 5-1, respectively) do not resemble those in AS/NZS 2885.1. For further details of the AS/NZS 2885.1 risk assessment process employed as part of the Formal Safety Assessment (FSA) for the Offshore TGP, refer to the *TGP Offshore Safety Case* (TGP-698-SC-HSE-004).

During development of the Offshore EP, inherent risk was also determined based on a scenario which considered that there were no management controls / mitigation measures in place, i.e. pre-treatment. This enabled the effectiveness of the controls, resulting in the residual risk, to be determined.

The environmental risk management process includes the identification of hazards or risks that are applicable to operational and maintenance activities and determination of the possible causes that could lead to the environmental risks identified. Each risk is evaluated using the Environmental Risk Matrix provided in Figure 5-1 to determine a risk ranking based on a combination of the expected frequency of the event occurring and the projected consequences from the event. As a result of the assessment, the appropriate management and control measures or treatments are implemented to keep the risks at a level considered to be ALARP. Further information is provided in Sections 5.1.3 and 5.1.4 below.

**Table 5-2: Environmental Consequences Classification**

| Consequence classification | Biodiversity   |  | Environmental Quality   |  |   | Societal considerations  |   |  |
|----------------------------|--|--|---|--|---|--|---|--|
|                            | Protected species  | Ecological diversity   | Water quality   | Marine sediment quality  | Air quality   | Protected areas  | Cultural matters  | Compliance   |
| <b>Catastrophic (A)</b>    | Eradication of local population.<br>Loss of critical habitats or activities.   | Significant and permanent effects on ecological diversity on a regional scale.   | Continuous or regular water contamination above background, national/ international quality standards and/or known biological effect concentrations on a regional scale.                            | Permanent to long-term contamination above background, national/ international quality standards and/or known biological effect concentrations on a regional scale.              | Continuous exceedance of national or international air quality standards.<br>Human fatalities possible.                                       | Significant permanent impact on one or more of protected-areas values.                           | Significant permanent effect on aesthetic, heritage, economic or recreational values.<br>Overall societal benefits do not outweigh impacts. | Significant and continuous licence, regulatory or company target exceedances.<br>Fines and/or prosecutions incurred or expected. |
| <b>Severe (B)</b>          | Extensive impact on population(s).<br>Significant impact on critical habitats or activities.   | Significant and permanent effects on ecological diversity on large scale.  | Continuous or regular water contamination above background, national/ international quality standards and/or known biological effect concentrations on a large scale.                               | Permanent to long-term contamination above background, national/ international quality standards and/or known biological effect concentrations on a large scale.                 | Frequent and sustained exceedance of national or international air quality standards.<br>Human fatalities possible.                           | Significant long-term impact on one or more of protected-areas values.                           | Significant long-term effect on aesthetic, heritage, economic or recreational values.<br>Overall societal benefits do not outweigh impacts. | Frequent and significant licence, regulatory or company target exceedances.<br>Fines or prosecutions likely.                     |
| <b>Major (C)</b>           | Minor disturbance to significant portion of population.<br>Minor impacts on critical habitats or activities.<br>No threat to overall population viability.                 | Significant and permanent effects on ecological diversity on medium scale.   | Continuous or regular discharge, with contamination above background, national/ international quality standards and/or known biological effect concentrations on a medium scale.                    | Permanent to long-term contamination above background, national/ international quality standards and/or known biological effect concentrations on a medium scale.                | Frequent, short-term exceedance of national or international air quality standards.<br>Human illness and environmental impacts possible.      | Moderate long-term or permanent impact on one or more of protected-areas values.                 | Moderate effect on aesthetic, heritage, economic or recreational values.<br>Overall societal benefits do not outweigh impacts.              | Frequent, minor to moderate licence, regulatory or company target exceedances.<br>Fines or prosecutions possible.                |
| <b>Moderate (D)</b>        | Minor disturbance or impact on a small portion of population.<br>Minor and temporary impact on critical habitat or activity.<br>No threat to overall population viability. | Loss of ecological diversity on a medium scale.<br>Community or habitat maintains ecological integrity but some change in species composition or abundance.<br>Communities, habitats and species well represented regionally.    | Continuous or regular discharge, with contamination above background, national/ international quality standards and/or known biological effect concentrations on a local or medium scale.           | Short- to medium-term contamination above background, national/ international quality standards and/or known biological effect concentrations on a medium scale.                 | Frequent temporary exceedance of national or international air quality standards.<br>Human illness and environmental impacts possible.        | Moderate medium term impact on one or more of protected-areas values.<br>Full recovery expected. | Moderate effect on aesthetic, heritage, economic or recreational values.<br>Overall societal benefits outweigh impacts.                     | Occasional significant licence, regulatory or company target exceedances.<br>Fines or prosecutions possible.                     |
| <b>Minor (E)</b>           | Minor and temporary disturbance to small portion of population.<br>No impact on critical habitat or activity.  | Loss of ecological diversity on a localised scale.<br>Community or habitat maintains ecological integrity but some change in species composition or abundance.<br>Communities, habitats and species well represented regionally. | Continuous or regular discharge, with contaminants reduced to below background, national/ international quality standards and/or known biological effect concentrations within a small mixing zone. | Short- to medium-term contamination above background, national/ international quality standards and/or known biological effect concentrations on a localised scale.              | Occasional and temporary exceedance of national or international air quality standards.<br>No effect on human health or the environment.      | Minor medium-term impact on one or more of protected-areas values.<br>Full recovery expected.    | Minor effect on aesthetic, heritage, economic or recreational values.   | Occasional minor licence, regulatory or company target exceedances.<br>No fines or prosecutions.                                 |
| <b>Slight (F)</b>          | Behavioural responses of negligible ecological significance.   | Minor loss of ecological diversity on localised scale.<br>Communities, habitats and species well represented on medium scale.  | Occasional discharge, with contaminants reduced to below background, national/ international quality standards and/or known biological effect concentrations within a small mixing zone.            | Short-term contamination above background, national/ international quality standards and/or known biological effect concentrations over a very small area (<1 km <sup>2</sup> ). | Very infrequent and temporary exceedance of national or international air quality standards.<br>No effect on human health or the environment. | Negligible impact on protected-areas values.   | Negligible effect on aesthetic, heritage, economic or recreational values.  | Very infrequent minor licence, regulatory or internal target exceedances.  |

**Table 5-3: Likelihood Class**

| Likelihood class   | Likelihood description  |
|--------------------|---|
| 1. Highly Likely   | Has occurred frequently at the location                                   |
| 2. Likely          | Has occurred frequently within the company                                |
| 3. Possible        | Has occurred once or twice in the company                                 |
| 4. Unlikely        | Has occurred several times within the industry but not within the company |
| 5. Highly Unlikely | Has occurred once or twice in the industry                                |
| 6. Remote          | Unheard of in the industry  |

|             |   |              | Likelihood |                 |          |          |          |               |
|-------------|---|--------------|------------|-----------------|----------|----------|----------|---------------|
|             |   |              | 6          | 5               | 4        | 3        | 2        | 1             |
|             |   |              | Remote     | Highly unlikely | Unlikely | Possible | Likely   | Highly likely |
| Consequence | A | Catastrophic |            |                 |          |          |          |               |
|             | B | Severe       |            |                 |          |          | Critical |               |
|             | C | Major        |            |                 |          | High     |          |               |
|             | D | Moderate     |            |                 | Medium   |          |          |               |
|             | E | Minor        |            | Low             |          |          |          |               |
|             | F | Slight       |            |                 |          |          |          |               |

| Risk Level | Description | Risk Management Actions   |
|------------|-------------|---|
| Critical   | Intolerable | Undertake an ALARP assessment to try to modify the threat, likelihood or consequences. For an operating pipeline or existing activity, the risk should be reduced immediately.  |
| High       | Tolerable   | Further assess risk and manage to an ALARP level. For an operating pipeline or existing activity, the risk should be reduced as soon as possible, typically within a few weeks. |
| Medium     |             | Review to ensure that adequate barriers and controls are in place. Try to implement additional mitigation measures / controls to further reduce risk.                           |
| Low        | Acceptable  | Manage by operational documentation / procedures. No further risk reduction required.   |

Figure 5-1 Environmental Risk Matix

### 5.1.3 Environmental Risk Assessment (ERA) Process

The ERA process applied is a detailed and systematic assessment of the risk associated with each identified hazard, including an assessment of the consequences and likelihood of each potential incident. The process is summarised as follows:

- ERAs are undertaken as structured workshops facilitated by an independent facilitator, with involvement from members of the workforce (where appropriate) and other external personnel with experience and knowledge appropriate to issues being considered
- The identified hazards or potential incidents are reviewed, and the associated risks (without controls) are analysed in terms of the likelihood of their occurrence and the consequences that would result if they did occur. Based on the combination of likelihood and consequences, a resultant risk ranking (inherent risk) is attributed using the Risk Matrix in Figure 5-1
- Controls and mitigation measures in place to prevent, mitigate or recover from the potential risk are then analysed and the likelihood and consequences of the risk, following the application of these controls and consideration of any assumptions and uncertainties, is re-evaluated. Relevant

legislation, policy and management / threat abatement plans are also considered in the measures where applicable.

- This results in a residual risk ranking, which is also assigned using the Risk Matrix in Figure 5-1. Where the risk assessment is a review of previous risk assessments, only the existing residual risk ranking is reviewed in consideration of any new information relevant to the hazard being considered
- As detailed in Section 5.1.4, residual risks that are rated as “Low” are considered “Acceptable”, whereas residual risks classified as “Critical” are considered “Intolerable” risks that must be managed immediately to reduce the risk
- “High” and “Medium” level risks are considered “Tolerable”, however, they must be subject to an ALARP assessment to determine whether the risks can be further reduced by implementing additional controls and mitigation measures
- ALARP assessments are reviewed for relevance and consistency as part of the ERA review process (refer below)
- Matters requiring action are recorded in an Action Plan. It is a requirement that these action plan items are followed up and closed out in a timely manner
- The TGP Offshore ERA / Environmental Aspects and Impacts Register is updated as part of the ERA process

It should be noted that the TGP Offshore ERA/Environmental Aspects and Impacts Register is a “live” document that is used and continually updated, as required, during operation, inspection and maintenance of the Offshore TGP to facilitate the appropriate management of all identified environmental risks. The environmental risk associated with Offshore TGP activities will be continually assessed as part of the “continual improvement” component of the environmental management process. The TGP Offshore ERA / Environmental Aspects and Impacts Register will be reviewed and updated, where required, whenever a review and amendment of the Offshore EP is required (refer to Section 8.5.5). A summary of the TGP Offshore ERA is found in Section 6.

#### 5.1.4 Risk Acceptance and ALARP Demonstration

The residual risk rankings from the ERA process are then evaluated to determine whether identified risks were considered acceptable or whether further management controls and mitigation measures were deemed necessary.

ALARP is defined as a level of risk that is tolerable and cannot be further reduced without the expenditure of costs that are disproportionate to the benefit gained or where the solution is impractical to implement. Consequently, a risk reduction measure could be considered as being reasonably practicable if the costs to implement it are not grossly disproportionate to the reduction in risk achieved.

As per Section 3.6.3 of *HB 203: 2012 Managing environment-related risk*, environmental risks with adverse impacts can generally be placed into the following 3 categories:

- **Intolerable Risks** – Risks that are unacceptable in any circumstances or at any level, or exceed thresholds set by regulations.
- **Tolerable Risks** – Risks that require further consideration to decide whether and how to treat them. This could involve a more detailed analysis to better understand the risk or a cost-benefit analysis of different potential treatment options. Risks are referred to as “tolerable” because they are tolerated under particular circumstances or for a specified time.
- **Acceptable Risks** – Risks that are at an acceptable level and do not need to be considered further.

As shown in Figure 5-1, residual risks classified as “Critical” are considered “Intolerable” risks that must be managed immediately to reduce the risk. Risks classified as “Low” are considered “Acceptable” risks, with no further risk reduction required. “High” and “Medium” level risks are considered “Tolerable”, however, they must be subject to an ALARP assessment to determine whether the risks can be further reduced by implementing additional controls and mitigation

measures. “High” level risks must be managed as a higher priority and within a shorter timeframe than those risks classified as “Medium” level.

In alignment with NOPSEMA’s ALARP Guidance Note (N-04300-GN0166, 2022) TGP have adopted the approach developed by Offshore Energies UK (OEUK) (formerly Oil and Gas UK) (OGUK, 2014) for use in the environmental context to determine and the assessment technique required to demonstrate that potential impacts and risks are ALARP (Figure 5-2).

Good practice controls are considered sufficient demonstration of ALARP in cases where the risk is relatively well understood, the potential impacts are low, activities are well practiced, and there are no conflicts with company values or significant media interest. This is referred to as Decision Context A.

An engineering risk assessment is required to demonstrate ALARP in cases where there is greater uncertainty or complexity around the activity and/or the risk / potential impact is moderate, it may attract local media attention and some persons may object. This is referred to as a Decision Context B.

Where the impact is sufficiently complex, has a high potential, uncertainty, or relevant person influence to require the precautionary approach, this is referred to as a Decision Context C. In this case, relevant good practice is still necessary, along with engineering risk assessment. The precautionary approach is to be applied for those controls that only have a marginal cost benefit.

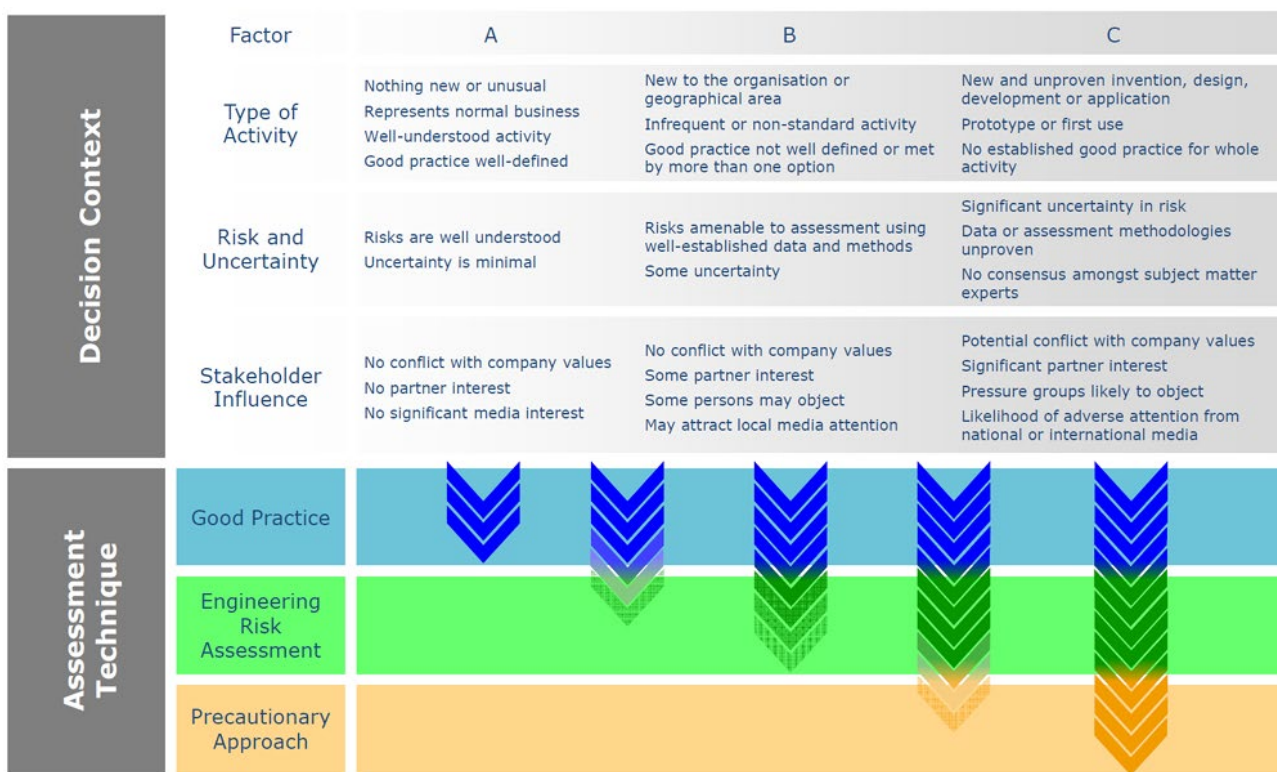


Figure 5-2: Risk Related Decision Support Framework (NOPSEMA, 2022)

### 5.1.4.1 Good practice

Good practice can be used as a generic term for those controls that are recognised as satisfying the law. For this EP, sources of good practice include:

- Requirements from Australian legislation and regulations.
- Relevant Australian policies.
- Relevant Australian Government guidance.
- Relevant industry standards and/or guidance.
- Relevant international conventions.

If Decision Context A is determined, then further assessment (engineering risk assessment - Section 5.1.4.2) is not required to identify additional controls.

#### 5.1.4.2 Engineering risk assessment

Where good practice is not well defined or where circumstances are not fully within the scope of current good practice, a more detailed engineering risk assessment is required. This assessment should include an assessment of risks, costs, environmental and socioeconomic benefits (OGUK, 2014).

#### 5.1.4.3 Precautionary approach

If the assessment, taking account of all available engineering and scientific evidence is insufficient, inconclusive or uncertain, then a precautionary approach to hazard management is needed (OGUK, 2014).

A precautionary approach will mean that environmental considerations are expected to take precedence over economic considerations, and a control measure that may reduce environmental impact is more likely to be implemented.

#### 5.1.5 Demonstration of Acceptable Level of Risk

An environmental impact or risk is reduced to acceptable levels if:

- The level of residual environmental risk was assessed as being ALARP (under the EP Act (Victoria) this is known as risks minimised so far as reasonably practicable); per Section 5.1.4; and
- The level of residual environmental risk was either Low or Medium; and
- The activity is commonplace in current offshore practice, and is compliant with current industry/TGPPL policy and standards, and Australian legislation; and
- The level of residual environmental risk does not affect biological diversity, ecological integrity or has the potential to result in serious or irreversible environmental damage; and
- Valid claims or objections to the risk from relevant persons, if any, are considered.

These factors are used to demonstrate acceptability in Section 6.

#### 5.1.6 Principles of ESD and the Precautionary Approach

Under Section 391(2) of the EPBC Act, a lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there may be threats of serious or irreversible environmental damage. Acceptability evaluations against the principles of ESD are provided in Table 5-4.

**Table 5-4: Principles of ESD**

| Principle  | Relevant to Acceptability   |
|--|---|
| Decision making processes should effectively integrate both long term and short term economic, environmental, social and equitable considerations.   | This principle is inherently met through the EP assessment process. This principle is not considered separately for each acceptability evaluation.  |
| If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. | An evaluation is completed to determine if the activity will result in serious or irreversible environmental damage. Where the activity has the potential to result in serious or irreversible environmental damage, further assessment is undertaken to determine if there is significant uncertainty in the evaluation. |

| Principle  | Relevant to Acceptability   |
|--|---|
| The principle of inter-generational equity, where the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations. | Where the potential impacts and risks are determined to be serious or irreversible, the precautionary principle is implemented to ensure the environment is maintained for the benefit of future generations. |
| The conservation of biological diversity and ecological integrity should be fundamental in decision making.  | An assessment is completed to determine if there is a potential to impact biological diversity and ecological integrity.  |
| Improved valuation, pricing and incentive mechanisms should be promoted.   | This is not considered relevant for a pipeline operation activity acceptability demonstration.  |

### 5.1.7 Environmental Risk Management Review

The General Manager TGPPL ensures that the TGP Offshore ERA/Environmental Aspects and Impacts Register is maintained and that a regular review of the contents of the register is undertaken to ensure that the information contained is both current and accurate as it relates to TGPPL's operations. As discussed in Section 5.1.3 above, as an integral component of the Offshore EP, the TGP Offshore ERA / Environmental Aspects and Impacts Register will also be reviewed and amended, as required, in line with the requirements of Section 8.5.5.

The General Manager TGPPL also manages an *Incident Management System (IMS)* for the TGP. This system registers all TGP incidents and the progress of actions to resolve issues and is available to all TGPPL personnel.

## 5.2 Sources of Environmental Risk

### 5.2.1 Planned Activities

The main sources of environmental risk associated with the Offshore TGP relate to activities which are planned and undertaken on a periodic basis only (approximately every 5 years – refer to Table 2-6 for more detail on planned activities frequency). Examples of these sources of environmental risk include:

- Routine inspection surveys, including the timing, location, use and presence of vessels and inspection equipment.
- Pipeline maintenance activities, such as span correction and anode replacement.
- Storage, handling and disposal of waste and chemicals on board vessels during inspection and maintenance activities.

Generally, the potential environmental impacts associated with planned activities are less significant than those potentially resulting from unplanned activities or incidents. However, as these sources of risk relate to planned activities occurring on a routine basis, this Offshore EP contain controls and mitigation measures to ensure environmental impacts and risks are reduced to ALARP and are of an acceptable level.

For further details regarding potential environmental impacts from Offshore TGP activities and the proposed controls and mitigation measures to minimise these impacts, refer to Section 6.

### 5.2.2 Unplanned Activities

Unplanned activities or events that could potentially impact on the Offshore TGP are largely related to management of pipeline integrity. TGPPL has additional documented measures to manage such issues are that addressed in the *TGP Offshore Pipeline Integrity Management Plan* (TGP-698-PA-IP-002) and discussed in more detail in Section 6.11.

The TGP is licensed to carry natural gas only, i.e. it contains no liquid hydrocarbons or contaminating compounds. Therefore, in the event of loss of pipeline integrity, the Offshore TGP is not considered a credible source of liquid hydrocarbon spills. As detailed in Section 2.2.2.1, a subsea gas leak due to loss of pipeline integrity is not expected to have any adverse environmental impacts.

During the ERA process, a number of unplanned activities or environmental incidents that could potentially result in environmental impacts were also identified, including: vessel collision with marine fauna, potentially resulting in injury or death (refer to Section 6.2); small scale chemical spills from vessel decks and inspection/maintenance equipment (refer to Section 6.8); introduction of invasive marine species from vessel ballast water discharge or biofouling (refer to Section 6.9) and relatively large scale fuel spills caused by vessel accidents (refer to Section 6.10).

Response requirements in the event of an emergency or incident are discussed in Section 9 of this Offshore EP, and oil spill response requirements are detailed in Section 9.4 Oil Pollution Emergency Plan (OPEP).

## 5.3 Other TGP Risk Management Studies

The other Risk Management Studies conducted by TGPPL in addition to the ERA for the offshore TGP are the Define Phase Risk Assessment and the Operations Risk Assessments.

From the Design Phase, the risk management documentation and processes related to safety and pipeline integrity for TGP offshore operations are detailed in the:

- *TGP Offshore Safety Case* (TGP-698-SC-HSE-004), provides information on how TGPPL ensures the integrity and safe operation of the Offshore TGP; and
- *TGP Offshore Pipeline Integrity Management Plan* (TGP-698-PA-IP-002), which outlines the risks associated with loss of pipeline structural integrity, both internally and externally

The Operations Risk Assessments are considered more 'live' and dynamic, following the TGPPL document control and regular review processes. The assessments include:

- A formal risk assessment for any new onshore pipeline lateral designs using the *AS/NZS 2885.1* methodology, and the Pipeline Risk Assessment Database updated with the outcomes of the new risk assessment studies
- HAZOP studies are performed for any design changes related to onshore facilities
- Procedural risk control measures identified during either the *AS/NZS 2885.1* risk assessment process or the HAZOP process are documented in procedures and work instructions before the new onshore laterals or modified onshore facilities come online. Changes introduced by new designs are managed using a formal change management process in accordance with the *TGP Change Management Plan* (TGP-698-PA-CM-001)
- Development and maintenance of the TGP Operational Risk Register to identify and manage hazards associated with work activities on the Offshore TGP
- Development and maintenance of the TGP Offshore ERA / Environmental Aspects and Impacts Register to identify and manage environmental impacts associated with work activities on the Offshore TGP
- Hazard Identification (HAZID) risk assessment performed prior to any Offshore TGP inspection or maintenance activities being carried out

- The Job Hazard Analysis (JHA) risk assessment process is used for all work activities on the TGP to identify and control hazards and reduce associated risks. The JHA is an integral component of the *TGP Permit to Work (PTW) Procedure* (TGP-698-PR-HSE-004)
- A full AS/NZS 2885.1 pipeline risk assessment (Safety Management Study) is conducted at least every five years, with changes managed using the GIS system, operator knowledge and the TGP Risk Register
- An annual AS/NZS 2885.1 pipeline risk assessment / review is conducted on the Offshore TGP in accordance with the *TGP Offshore Pipeline Integrity Management Plan* (TGP-698-PA-IP-002). The most recent pipeline integrity review report was undertaken in January 2024.
- Any alterations to the Offshore TGP will be in accordance with the *TGP Change Management Plan* (TGP-698-PA-CM-001) and will be subject to a thorough engineering review. However, no modifications to the Offshore TGP are envisaged at the time of submitting the EP.

## 6. ENVIRONMENTAL IMPACTS, RISKS AND CONTROL MEASURES

### 6.1 Overview

This section will discuss the environmental impacts associated with this activity, assess the consequences and the control measures to be implemented to reduce impacts to ALARP and acceptable levels. Part of the ALARP assessment includes an examination of controls considered and assessed against the acceptability criteria. Environmental protection objectives (EPOs), controls, environmental protection standards (EPSs) and measurement criteria are provided for each aspect in Section 7.

#### 6.1.1 Impact and Risk Analysis and Evaluation

As required by OPGGS (Environment) Regulation 21(5) and 21(6), the analysis and evaluation of identified risks and impacts are reduced to ALARP, are of an acceptable level and consider all operations of the activity, including potential emergency conditions.

Impacts and risks identified during the ERA cover both planned (routine and non-routine) activities and unplanned events (accidents, incidents and emergency situations).

The impact and risks assessments found in this section have been grouped on environmental aspect (e.g. emissions, physical presence, etc). For each assessment the worst-case, credible consequence was assumed.

A summary of the impacts and risks is provided in Table 6-1.

#### 6.1.2 Impacts and Risks Deemed Not Credible or Outside of the Scope of this Environment Plan

##### 6.1.2.1 Risks and Impacts Not Credible

Impacts and risks identified and discussed during the ERA were found to be credible and therefore subject to full environmental assessment.

##### 6.1.2.2 Potential Environmental Risks not within the Scope of this Environment Plan

The ERA identified the following environmental risks that were assessed as not being applicable to EP, as they were outside of the Operational Area.

###### 6.1.2.2.1 GHG Emissions Associated with Onshore Processing, Distribution and End Use

TGPPL do not own or operate the gas production or processing infrastructure. Therefore, any emissions associated with the offshore/onshore production, onshore processing, and their party transport of TGP gas products, as well as the distribution and end use, are management by third parties.

###### 6.1.2.2.2 Cumulative Impacts

TGPPL has assessed the cumulative impacts of the TGP in relation to other relevant petroleum activities. Other facilities location in proximity to the Operational Area were identified in Section 2.1.7. Given the nature and scale of TGPPL's activities and the distance from other operators, it is highly unlikely that concurrent activities with other operations would occur, require communications between operators and the inherent risk reduction in avoiding such situations. Therefore, no cumulative risks or impacts will credibly occur.

However, given the concentration of sources of environmental risks and impacts from TGPPL's activities are localised, the potential for cumulative impacts is considered to be low. Where relevant, the cumulative impacts of activities associated with undertaking multiple concurrent or parallel activities associated with this EP have been assessed for cumulative impacts.

**Table 6-1: Summary of impact assessment**

| EP Section Reference | Aspect   | Source of Impact   | Key Potential Environmental Impacts  | Inherent Consequence Level | Residual Consequence Level | Residual Risk Level |
|----------------------|--|--|--|----------------------------|----------------------------|---------------------|
| 6.2                  | Physical presence: vessel collision with marine fauna  | Physical presence of vessels resulting in collision with marine fauna  | Potential injury or death of marine fauna (single animal), including protected species.  | Moderate                   | Minor                      | Low                 |
|                      | Routine light emissions                                | Light emissions from Vessel, USV, ROV and inspection tools   | Potential slight, localised behavioural disturbances of species in close proximity to light source   |                            |                            |                     |
| 6.3                  | Physical presence: seabed disturbance                  | Disturbance of the seabed from Vessel activities (i.e. mooring or anchoring and dropped objects) and from TGPPL activities, such as: <ul style="list-style-type: none"> <li>Placement of concrete mattress over damaged areas of the pipeline</li> <li>Placement of filling of grout bags</li> <li>Jetting to correct spans outside of specifications</li> </ul> | Potential minor localised impact to benthic habitat.   | Minor                      | Slight                     | Low                 |
| 6.4                  | Physical presence: interaction with other marine users | Presence of vessel and subsea infrastructure, excluding or displacing other users from the Operating Area  | Potential isolated social impact resulting from interference with other sea users (i.e. commercial shipping, fishing, tourism, recreational activities and other oil and gas operators). | Minor                      | Slight                     | Low                 |
| 6.5                  | Routine noise emissions                                | Underwater noise generated from vessels and TGPPL activities, including IMR activities, pigging and vortex induced vibration along the pipeline  | Potential temporary, slight, localised behavioural impacts to marine fauna around the noise source.<br>No behavioural impacts associated with pipeline operations.                       | Minor                      | Slight                     | Low                 |
| 6.6                  | Routine atmospheric and greenhouse gas emissions       | Release of air pollutants and greenhouse gases from vessels.   | Potential short-term localised decrease in air quality.  | Slight                     | Slight                     | Low                 |

| EP Section Reference | Aspect  | Source of Impact  | Key Potential Environmental Impacts   | Inherent Consequence Level | Residual Consequence Level | Residual Risk Level |
|----------------------|---|---|---|----------------------------|----------------------------|---------------------|
| 6.7                  | Unplanned discharge: waste  | Accidental loss of solid hazardous and non-hazardous waste to the environment.  | Potential minor short-term impacts to the marine environment including disruption to marine fauna, including protected species, and temporary impacts to water quality.   | Minor                      | Minor                      | Low                 |
|                      | Routine and non-routine discharges: vessel operations                 | Routine and non-routine discharge of deck and bilge water, grey water, sewerage, and putrescible wastes from vessels.         | Potential slight short-term, localised decrease in water quality around the vessel, with no lasting effect.   |                            |                            |                     |
| 6.8                  | Unplanned discharge: chemicals during transfer, storage or use        | Accidental discharge of chemicals from vessel activities and equipment used in IMR activities.                                | Potential minor short-term impacts to the marine environment including disruption to marine fauna, including protected species, and temporary impacts to water quality.   | Minor                      | Minor                      | Low                 |
| 6.9                  | Physical presence: accidental introduction of invasive marine species | Introduction and establishment of invasive marine species (IMS) in vessel ballast tanks or on vessel / submersible equipment. | Potential introduction of invasive marine species resulting in an alteration of the localised environment.  | Minor                      | Slight                     | Low                 |
| 6.10                 | Unplanned hydrocarbon release: vessel collision                       | Loss of hydrocarbons to the marine environment due to a vessel collision (e.g. TGPPL vessel or other marine users)            | Potential for minor short-term impacts to the marine environment: <ul style="list-style-type: none"> <li>• sensitive nearshore areas of coastal shorelines and offshore islands</li> <li>• Disruption to marine fauna, including protected species</li> <li>• Interference with or displacement of other sea users</li> </ul> | Moderate                   | Minor                      | Low                 |
|                      | Unplanned discharge: hydrocarbons during transfer, storage or use     | Accidental discharge of hydrocarbons from vessel activities and IMR equipment   | Potential minor short-term impacts to the marine environment including disruption to marine fauna, including protected species, and temporary impacts to water quality.   |                            |                            |                     |

| EP Section Reference | Aspect  | Source of Impact   | Key Potential Environmental Impacts  | Inherent Consequence Level | Residual Consequence Level | Residual Risk Level |
|----------------------|---|--|--|----------------------------|----------------------------|---------------------|
| 6.11                 | Unplanned hydrocarbon release: loss of pipeline integrity | Release of hydrocarbons from the pipeline due to failure of pipeline integrity | Potential for minor short-term impacts to the marine environment: <ul style="list-style-type: none"> <li>• sensitive nearshore areas of coastal shorelines and offshore islands</li> <li>• Disruption to marine fauna, including protected species</li> </ul> Interference with or displacement of other sea users | Moderate                   | Minor                      | Low                 |
|                      |   | Release of hydrocarbons from anchor drag or dropped objects onto the pipeline  |  |                            |                            |                     |

### 6.1.3 Environmental Performance Outcomes, Standards and Measurement Criteria

Regulation 21(7) of the Environment Regulations requires that an EP includes Environmental Performance Outcomes (EPOs), Environmental Performance Standards (EPSs) and Measurement Criteria that address legislative and other controls to manage the environmental risks and impacts of the activity to ALARP and Acceptable levels.

As defined in Regulation 5 of the Environment Regulations, an EPO “for an activity, means a measurable level of performance required for the management of environmental aspects of the activity to ensure that environmental impacts and risks of the activity will be of an acceptable level”.

The EPOs, EPSs and MC specified in this EP are consistent with legislative requirements and TGPPL’s standards and procedures. They have been developed based on the Codes and Standards, Good Industry Practices outlined in Sections 5.1.4 as part of the acceptability and ALARP justification process.

The EPOs, EPSs and MC are presented throughout this section and in Appendix F. A breach of these EPOs or EPSs constitutes a ‘Recordable Incident’ under the Environment Regulations (refer to Section 8.6.4).

For the physical and biological receptors within the EMBA, TGPPL has set EPOs that are consistent with the Matters of National Environmental Significance – Significant impact guidelines 1.1 (Department of the Environment 2013). EPOs are set so that they are consistent with the principles of ESD as defined in the Section 3A of the EPBC Act and this is demonstrated through the acceptability process (described in Section 5.1.5), which is applied to the aspects / receptors in this Section. The EPOs for planned activities have been set at a level of environmental performance that considers the planned activities and associated level of environmental impact. This means that it can be demonstrated that changes which do not trigger EP resubmission as per MOC process (refer to Section 8.2.1) are able to be managed to the Acceptable level.

For social receptors, including fishing and other commercial activities, the EPOs that have been set reflect the requirements in the section 280(2) of the OPGGS Act, in that the activities undertaken as a part of the operation of TGP should not interfere with other marine users, to a greater extent than is necessary for the exercise of right conferred by the titles granted.

## 6.2 Physical Presence and Light Emissions

**Table 6-2: Impact/Risk Evaluation Summary**

| Source of Impact/Risk   | Environmental Value Potentially Impacted |               |             |                     |         | Evaluation     |               |                 |             |              |               |
|---|--|---------------|-------------|---------------------|---------|----------------|---------------|-----------------|-------------|--------------|---------------|
|   | Seabed Sediment                          | Water Quality | Air Quality | Ecosystem / Habitat | Species | Socio-economic | Decision Type | Likelihood      | Consequence | Risk Ranking | Acceptability |
| Vessel movements, timing and location of activities (vessel strike) |  |               |             |                     | ✓       |                | A             | Highly unlikely | Minor       | Low          | Acceptable    |
| Light emissions from vessel, ROV, USV                               |  |               |             |                     | ✓       |                |               | Remote          | Minor       | Low          |               |

Marine fauna species have been identified along the Offshore TGP route as detailed in Section 4.3.

Threatened species listed under the EPBC Act are protected by legislation and include species listed as endangered or vulnerable, migratory species including birds and mammals, and cetaceans including whales and dolphins. In addition, State legislation protects threatened species, communities, and whales in coastal waters (refer to Appendix A). Under State and Commonwealth legislation it is an offence to kill, injure, take or interfere with threatened species, migratory species and cetaceans.

### 6.2.1 Impact of Activities

TGP daily pipeline operations (i.e. continuous transport of gas) are completely internal to the pipeline, with no offshore activities or external effects during standard operating conditions.

TGP offshore inspection and maintenance activities have the potential to impact on marine fauna through the physical presence and use of vessels and inspection/maintenance equipment. As shown in Table 2-6 Maintenance and inspection activities could occur at any time of the year and be expected to occur once every 5 years for a period up to 4 weeks, depending on the scope of work. Conservatively the assessment of impacts (Section 6.2.1) is based on a worst-case scenario of 2 x 28-day maintenance/inspection activities occurring in 5 years within the OA.

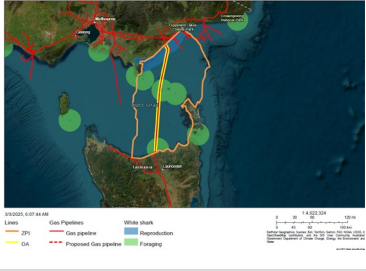

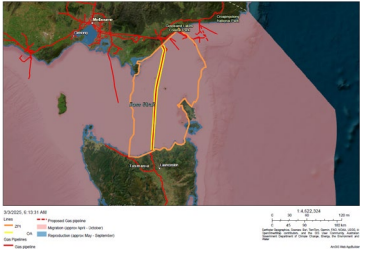

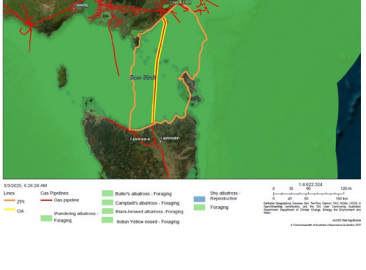
Vessels are equipped with navigational and safety lights and USVs are equipped with safety lights. It is expected that operations will be conducted 24 hours a day.

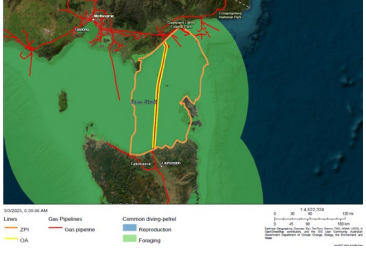
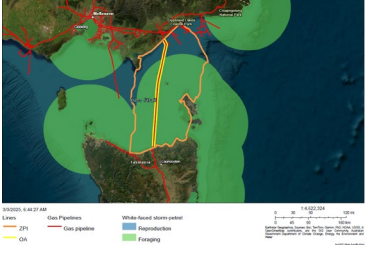

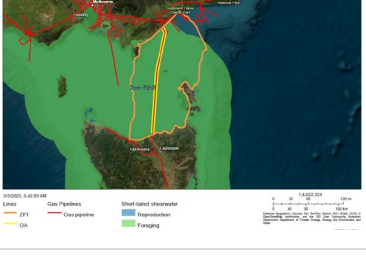
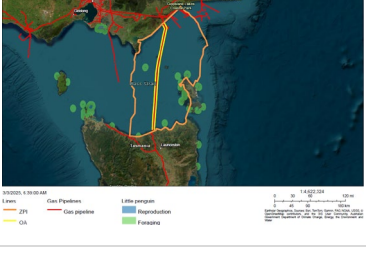
Impacts to marine fauna assessed in this Section include:


- Vessel movements resulting in vessel strike (Australian National Guidelines for Whale and Dolphin Watching 2017)
- Light emissions resulting in the disruption to marine fauna feeding and breeding behaviours – particularly for turtles and seabirds (National Light Pollution Guidelines for Wildlife, 2023)

Table 6-3 has identified several species with BIA's that intersect either OA or EMBA, and key threats posed by the petroleum industry as that are mentioned in the Conservation advice or Recovery plan. Section 6.2.2 details the threats to these species in more detailed where the BIA intersects with the planned activities.

**Table 6-3: Table of Control Measure Sections relevant to EPBC Protected Species with BIA Map and Conservation Advice**

| Common Name  | Key Threats (relevant to petroleum activities)   | Control Measure(s) Sections                             | BIA Time Frame   | Conservation Advice or Recovery Plan   | BIA Map   |
|--|--|---|--|--|---|
| Great White Shark  | None identified  | N/A   | None specified   | Recovery Plan for the White Shark  |    |
| Pygmy Blue Whale   | Noise interference<br>Habitat modification from marine debris or chemical discharge<br>Vessel strike | Section 6.5<br>Sections 6.7, 6.8 and 6.9<br>Section 6.2 | None specified   | Conservation Management Plan for the Blue Whale, 2015-2025   |   |
| Southern-right Whale   | Noise interference<br>Pollution<br>Vessel strike   | Section 6.5<br>Sections 6.7, 6.8 and 6.9<br>Section 6.2 | <b>Reproduction:</b><br>approx. May-December<br><b>Migration:</b><br>approx. April - October | Conservation Management Plan for the Southern-right Whale, 2011-2021,<br>National Recovery Plan for the Southern Right Whale ( <i>Eubalaena australis</i> ) 2024 |  |
| Antipodean Albatross   | Human disturbance<br>Marine pollution, including marine debris                                       | Section 6.2<br>Sections 6.7, 6.8 and 6.9                | None specified   | National Recovery Plan for Albatrosses and Petrels (2022)  |  |
| Black-browed Albatross<br>Buller's Albatross<br>Campbell Albatross<br>Indian Yellow-nosed Albatross<br>Shy Albatross | Human disturbance<br>Marine pollution, including marine debris                                       | Section 6.2<br>Sections 6.7, 6.8 and 6.9                | None specified   | National Recovery Plan for Albatrosses and Petrels (2022)  |  |

| Common Name   | Key Threats (relevant to petroleum activities)                 | Control Measure(s) Sections              | BIA Time Frame | Conservation Advice or Recovery Plan | BIA Map   |
|---|--|--|----------------|--------------------------------------|---|
| Wandering Albatross                                   |  |  |                |                                      |   |
| Common Diving Petrel                                  | Human disturbance<br>Marine pollution, including marine debris | Section 6.2<br>Sections 6.7, 6.8 and 6.9 | None specified | -                                    |    |
| White-faced Storm Petrel / White-bellied Storm-Petrel | None identified  |  | None specified | -                                    |   |
| Black-faced Cormorant                                 | None identified  | -  | None specified | -                                    |  |
| Short-tailed Shearwater                               | None identified  | -  | None specified | -                                    |  |
| Little penguin  | None identified  | -  | None specified | -                                    |  |

| Common Name        | Key Threats (relevant to petroleum activities) | Control Measure(s) Sections | BIA Time Frame | Conservation Advice or Recovery Plan | BIA Map  |
|--------------------|--|-----------------------------|----------------|--------------------------------------|--|
| White-fronted Tern | None identified                                | -                           | None specified | -                                    |  <p>The map displays the Tasmanian Gas Pipeline (TGP) route in orange, with various marine reserves and foraging areas highlighted in green and blue. A legend at the bottom identifies symbols for Gas Pipelines, White-fronted terns, TGP 2/1, Gas pipeline, Reproduction, TGP OA, Proposed Gas pipeline, and Foraging.</p> |

## 6.2.2 Identification of Environmental Risks

The key potential impacts to marine fauna in proximity to the Offshore TGP during pipeline inspection and maintenance activities are:

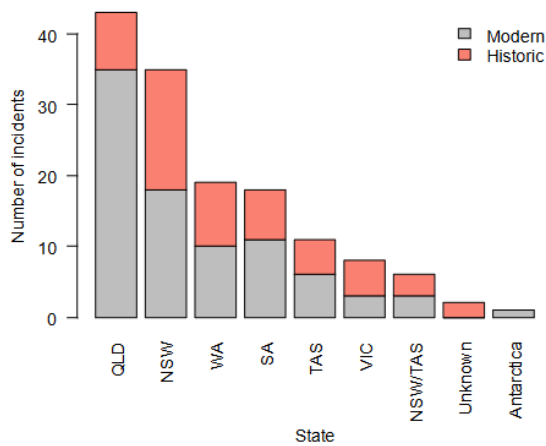
### 6.2.2.1 Injury to, or death of, marine fauna (including listed species) because of vessel strike

From the planned activities outlined in Section 2.2.1, inspection and maintenance vessels are expected to be required less than once every 2 years on average, with the length of any one voyage generally less than 4 weeks. Any activities are localised to the pipeline route, with no activity of long-term duration at any one location.

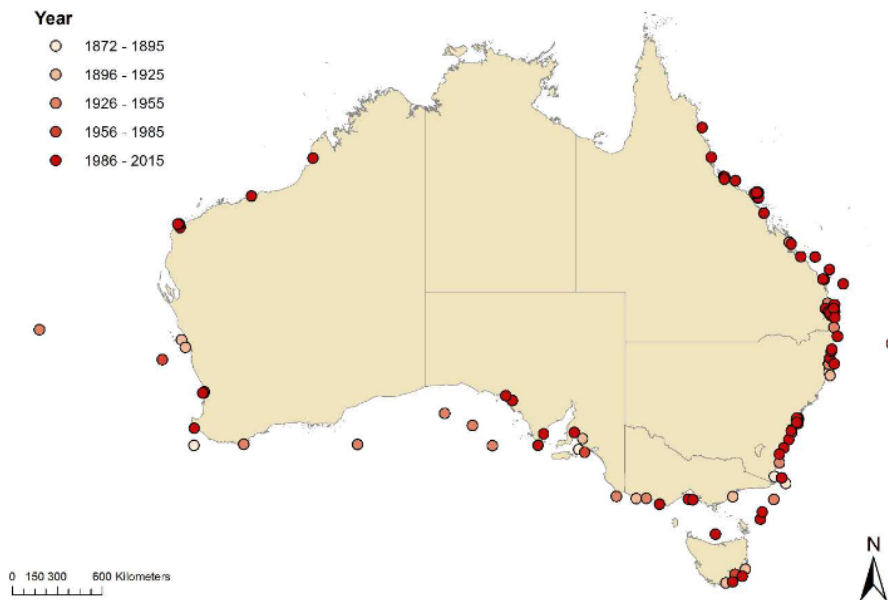
The majority of Offshore TGP inspection and maintenance activities occur in the open ocean and vessels appropriate to this environment will be contracted to perform the required work. No vertebrate fauna populations are known to inhabit the immediate area of the pipeline outside the coastal zone, with inspection and maintenance activities confined to areas located at least 7 km from the nearest onshore breeding or home habitat.

There is the potential for some larger marine fauna (cetaceans, pinnipeds, turtles, etc.) to traverse the Offshore TGP route when pipeline inspection and maintenance activities are being undertaken. Table 6-3 has identified that the OA intersects with White Shark, Southern Right Whale and Pygmy Blue Whale foraging areas, although it doesn't specify clear areas of aggregation or likelihood of encounter. Encounters with marine fauna are likely to occur in the vicinity of the marine reserves noted in Section 4.6.

Collisions with marine fauna can occur anywhere, the risk increases in breeding areas and along migration routes. Collision risk also increases in shallow waters where a vessel has less under-keel clearance, leaving the animal less room to avoid the vessel (AMSA, 2023). Vessel strike data has been collected for the period of 1997 to 2015 (Peel, Smith, & Childerhouse, 2016), which show that less than 10 strikes have occurred in Victorian waters and approximately 10 have occurred in Tasmanian waters (refer to Figure 6-1 and Figure 6-2).



**Figure 6-1: Total Number of Reported Vessel Strikes by Australian State and Territory from Historic (<1995) and Modern (>1995) Data (Peel, Smith, & Childerhouse, 2016)**



**Figure 6-2: Approximate Locations of Reported Vessel Strike Collisions (Peel, Smith, & Childerhouse, 2016)**

A number of whale species have been identified as having interacted with vessels, with the Humpback Whale interaction being the highest, followed by the Southern Right Whale (Peel, Smith, & Childerhouse, 2016). A number of whale species may be observed in the waters within the vicinity of the OA.

Vessel strike is referenced as a key threat in the Conservation Advice / Management Plans for Pygmy blue whale and southern right whale. The OA overlaps pygmy blue whale distribution and possible foraging habitat but is not within a recognised feeding area such as the Bonney Upwelling (DOEE, 2015c). The southern right whale migration BIA and reproduction BIA (coastal waters) overlaps the TGP OA. Southern right whales are potentially present within the migration BIA between April and October. Potential impacts were assessed against the applicable recovery actions in the National Recovery Plan for the Southern Right Whale (Table 6-4) and the Conservation Management Plan for the Blue Whale (Table 6-5). Based on this assessment and the controls in place, the consequence level from vessel strikes is assessed as Minor.

For the southern right whale, foraging and feeding occurs in a broad latitudinal range between at least 30°S and 65°S, particularly in offshore areas associated with large-scale features such as the Subtropical and Polar Fronts (Torres et al. 2013, Carman et al. 2019). This is located much further

south and beyond the OA and EMBA of TGP, so the likelihood of interaction with the population during the foraging season is considered low, compared to breeding months. Around breeding times, in Victoria there is a regular aggregation area in waters off Warrnambool at Logans Beach and increasing numbers of sightings along the Gippsland coast (east from Wilsons Promontory), and relatively regular sightings along the southeast coast of Tasmania (Stamation et al. 2020, Watson et al. 2021) (DCCEE, 2024e). Therefore, consideration of timing of activities is critical in managing the opportunity of vessel strike with cetaceans, and more specifically the Southern Right Whale.

**Table 6-4: Assessment of Vessel Strike Impact against the National Recovery Plan for the Southern Right Whale**

| Description  | Justification  |
|--|--|
| Action Area A6 - Manage, minimise and mitigate the threat of vessel strike   |  |
| 1. Assess risk of vessel strike to South Right Whale in BIAs   | <p>The risk of vessel strike is reduced with vessels/USVs to continuously observe for marine fauna and other marine users. The risk ranking is Low as the Vessel Master (CM1):</p> <ul style="list-style-type: none"> <li>- Will follow Part 8 Division 8.1 of the EBPC Regulations and the Australian National Guidelines for Whales and Dolphin Watching 2017</li> <li>- Vessel Master or delegate will always be on duty</li> <li>- The no-approach and caution zones established for cetaceans and seal colonies will be adhered to and the vessel or USV will not approach closer than: <ul style="list-style-type: none"> <li>- No-approach zone: Whales 100m, Dolphins 50m, Sea Colony (pupping season – Nov to Dec) 100m, Sea Colony (Jan to Oct) 50m</li> <li>- Caution zone – Whales 300m, Dolphins 150m and Sea Colony (Nov to Dec) 200m</li> </ul> </li> <li>- The vessel or USV will not knowingly travel faster than 6 knots within caution zone and avoids sudden changes in speed and direction.</li> <li>- The vessel or USV will immediately move away from the caution zone at a constant speed of less than 6 knots if a cetacean shows signs of being disturbed.</li> <li>- The vessel or USV will not restrict the path of, or pursue, a cetacean</li> </ul> |
| 3. Ensure environmental impact assessments and associated plans consider and quantify the risk of vessel strike and associated potential cumulative risks in BIAs and habitat critical to the survival | <p>The National Recovery Plan for the Southern Right Whale identified the consequence of vessel strike as Major, however the TGP ERA process evaluated the consequence as Minor based on the impact being on a small portion of the population but no threat to the overall population viability. With the adoption of control measures the likelihood was assessed as highly unlikely.</p>  |
| 5. Ensure all vessel strike incidents are reported in the National Ship Strike Database managed through the Australian Marine Mammal Centre, Australian Antarctic Division                             | <p>TGPPL responsibility to report southern right whale vessel strike incidents to these authorities, additional to DCCEE (Table 8-3) (CM40).</p>   |

**Table 6-5: Assessment of Vessel Strike Impact against the Conservation Management Plan for the Blue Whale**

| Description   | Justification   |
|---|---|
| A4 – Minimising vessel collisions   |   |
| 2. Ensure all vessel strike incidents are reported in the National Ship Strike Database.  | TGPPL responsibility to report blue whale vessel strike incidents to DCCEEW (Table 8-3) (CM40).   |
| 3. Ensure the risk of vessel strikes on blue whales is considered when assessing actions that increase vessel traffic in areas where blue whales occur and, if required, appropriate mitigation measures have been implemented. | The Conservation Management Plan for the Blue Whale identified the consequence of vessel strike as Major, however the TGP ERA process evaluated the consequence as Moderate based on the impact being on a small portion of the population but no threat to the overall population viability. With the adoption of control measures the likelihood was assessed as highly unlikely. |

Australian Humpback dolphin, Common Bottlenose dolphin, Indo-pacific Bottlenose dolphin and Risso’s dolphin have been identified as interacting with vessels (Peel, Smith, & Childerhouse, 2016). The Common Bottlenosed dolphin was shown to have the highest recorded incidence of interaction. Several dolphin species may be observed within the vicinity of the OA.

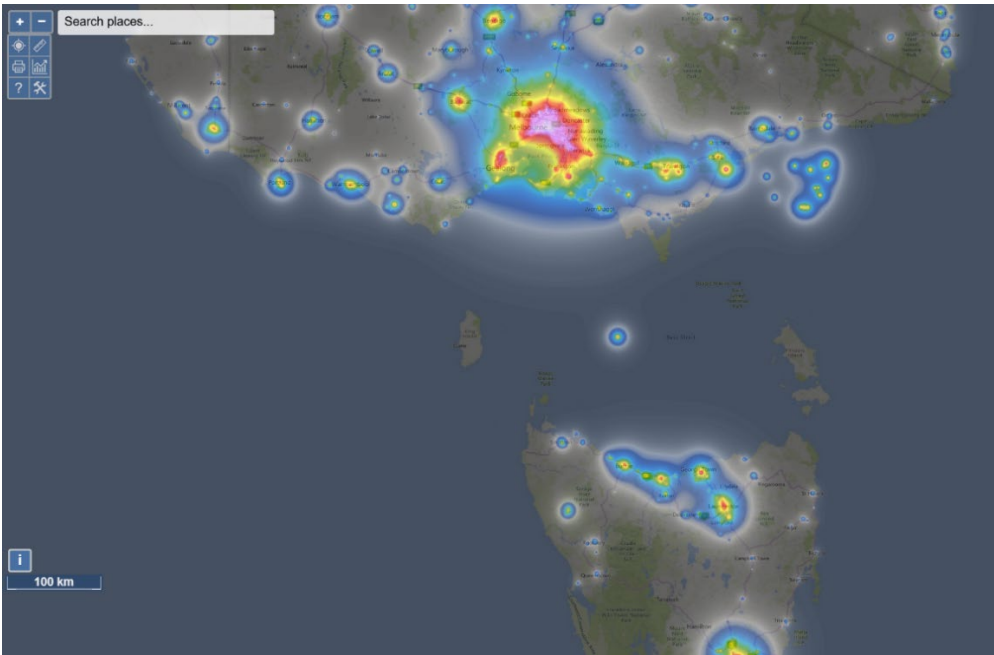
Incidents of seals being injured by boat propellers indicate that the cause may be due to the seal interacting/playing with a boat. The Australian and New Zealand fur seals are highly agile species that haul themselves onto rocks or other structures, as available, easily avoiding collision with a moving vessel. The likelihood of a boat strike for seals is considered Highly Unlikely.

During inspection and maintenance activities, the vessel is either stationary or moving slowly. Figure 4-5 shows the density and pathway of vessel movements through the Bass Strait, which were tracked during 2020 (AMSIS, 2020). Vessels are shown to traverse across the Bass Strait and in the vicinity of the OA, however most vessel movements are concentrated around the Victorian coastline, in the southern Australian shipping lane, which crosses the OA. It is anticipated that TGP’s operations will only result in approximate two IMR activities involving a single vessel or USV over the life of the EP, for a period up to 4 weeks, each. This represents a small increase in the vessel numbers in the OA, not significantly increasing cumulative impacts associated with vessel strikes.

Given the low number of fauna deaths from vessel strike since data collect began in 1872, the likelihood of marine fauna being struck by a TGP operated vessel is Highly Unlikely. If a fauna strike were to occur and resulted in death, it is not expected to have a determinantal effect on the overall population. The duration of exposure to fauna from vessels is limited to the duration of IMR activities (28 days per inspection). In addition, due to the slow speed the vessel / USV will be operating at within the OA, in the unlikely event that a marine species is struck, the impact is expected to be non-life threatening. The risk of vessel strike during Offshore TGP inspection and maintenance activities is therefore considered low.

#### 6.2.2.2 Disturbance to marine fauna (including altered feeding, nesting, nursing, mating or migrating behaviour) from artificial lighting on inspection and maintenance vessels.

Despite the high level of shipping activities present in the Bass Strait, ambient night-time lighting is recorded as Bortle Class 2 – average dark sky, in coastal areas to Bortle Class 1 – excellent dark sky, over most of the offshore pipeline route (Figure 6-3).



**Figure 6-3: Light Pollution in South East Australia (NASA, 2024)**

Light emissions are generated from vessel navigation and safety lighting, and from maintenance activities such as operating an ROV. This lighting typically consists of bright white (i.e. metal halide, halogen, fluorescent) lights and is not dissimilar to lighting used for other offshore activities, including fishing and shipping. Lighting is required for the safe operation of the vessel and cannot be reasonably eliminated. Crewed vessels use exterior lighting to ensure safe working conditions for personnel on the back deck or in accommodation areas. It is not possible to eliminate this light source. Uncrewed surface vessels do not require the use of exterior lighting except for the purpose of navigation, thus emitting less light into the surrounding environment than a typical crewed vessel. During IMR activities, underwater lighting may be generated for short periods of time when ROVs are in use. Given the intensity of ROV lights and the attenuation of light in seawater, light from ROVs will be localised to the vicinity of the ROV and vessels (Woodside , 2020).

As described in Section 2.2.1.2, a vessel is expected to be present in the operating area for IMR activities twice during the five-year period for less than 4 weeks, typically. Once the activity has been completed and the vessel has departed the area there will be no further light emissions from TGP activities within the OA. Light emissions in any one area are governed by the transient nature of the works along the pipeline route. Activities will be completed sequentially which limits cumulative impacts from multiple light sources in a single area. The vessel is expected to only remain in any one area for a period of hours to days. In addition, the OA is located over 3 km from the nearest offshore facility.

Woodside undertook modelling of light emissions from the pipelay vessel - the Saipem Castorone, which is a significantly larger than the vessels typically used by TGP, as shown in Table 6-6.

**Table 6-6: Comparison of Vessel Specifications between the Saipem Castorone (basis for light modelling conducted by Woodside (Woodside , 2020)), Outer Limit (typical crewed vessel utilised for TGP) and UVS X-14 (typical uncrewed vessel utilised for TGP)**

| Specifications                                  | Saipem Castorone | Offshore Unlimited Outer Limit | USV X-14 |
|---|------------------|--------------------------------|----------|
| Length (m)                                      | 325              | 34.9                           | 4.5      |
| Breadth (m)                                     | 39               | 11.5                           | 2.2      |
| Height (m) – keel to top of mast crane pedestal | 67.5             | 13.3                           | 2        |
| Gross tonnage (t)                               | 102,032          | 436                            | -        |
| Deck (m <sup>2</sup> )                          | 4,300            | 176                            | -        |

The outputs from the model were provided in radiance, relative to full moon radiance and were considered applicable to a range of different fauna with similar wavelength perception, including turtles and seabirds. This is summarised in Table 6-7. Modelling indicated that light emissions would return to ambient levels within 5.7 km of the vessel, as shown in Table 6-7 (Woodside , 2020). Furthermore, it was evaluated that behavioural impacts were likely to occur within 0.6 km of the vessel (Woodside , 2020).

**Table 6-7: Distance of Equivalent Moon Radiances for the Pipelay Vessel (Woodside , 2020)**

| Proportion of radiance of a full moon* | Equivalent distance from lighting source (m) |
|--|--|
| 10                                     | 180  |
| 1                                      | 570  |
| 0.1                                    | 1,790  |
| 0.01                                   | 5,740  |

\* Where 10 equals the radiance of ten full moons and 0.01 equals 100<sup>th</sup> of the radiance of one full moon.

Given the size of vessels utilised for TGP inspection and maintenance activities being considerably smaller than a pipelaying vessel, these light impacts represent a worst-case scenario. Woodside undertook further lighting studies that showed light emissions from vessel navigational lighting is expected to be below 1.00 Lux within 300 m from the source (Woodside Energy, 2025a). Light emissions along the pipeline will be infrequent and transient.

Artificial nighttime light has the potential to affect a diverse array of ecological processes in the marine environment, such as orientation, reproduction, feeding and communication (Davies, Duffy, & Bennie, 2018) (Commonwealth of Australia, 2020). Light emissions may result in a localised change to marine fauna behaviour. Marine species with the greatest sensitivity to light include marine turtles, seabirds, and migratory shorebirds. Commonwealth of Australia (2020) determined the risk posed to seabird populations from light pollution to be moderate. This assessment determined that while impacts to seabird population are reasonably expected to occur every year (likelihood – almost certain), the consequences to individuals may be adversely affected but there is no effect at the population level (consequence – minor).

The National Light Pollution Guidelines for Wildlife (DCCEE, 2023) indicate that a 20 km buffer or exposure area can provide a general precautionary light impact limit based on observed effects of sky glow on marine turtle hatchlings and on grounded fledgling seabirds. However, TGP will adopt an impact zone of 5.7 km and behavioural zone of 0.6 km from the light source (vessel). This is

considered conservative given the vessels employed by TGP for offshore activities are significantly smaller than the pipelay vessel used to model lighting impacts, as shown in Table 6-6.

#### 6.2.2.2.1. Seabirds

Artificial lighting is identified as a threat within the Wildlife Conservation Plan for Migratory Shorebirds (Commonwealth of Australia, 2015b), the Wildlife Conservation Plan for Seabirds (Commonwealth of Australia, 2020) and the National Recovery Plan for Albatrosses and Petrels 2022 (DCCEEW, 2022b). The National Recovery Plan for Albatrosses and Petrels 2022 examined the risk posed to albatrosses and petrels for each threat identified within the recovery plan and found the Black Petrel had a moderate risk from artificial lighting (DCCEEW, 2022b). All other species of albatross and petrel identified in the recovery plan were not identified as being at risk from artificial lighting. It is noted that the Black Petrel is not listed as a threatened species under the Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth), Flora and Fauna Guarantee Act 1988 (Victoria) or the Threatened Species Protection Act 1995 (Tasmania), nor is a BIA for this species in effect in the OA or the wider EMBA.

Wildlife Conservation Plan for Seabirds (Commonwealth of Australia, 2020) found that adult seabirds are less impacted by artificial lighting than fledglings, but many species of albatrosses, shearwaters and petrels are vulnerable to artificial lighting when returning and leaving the nesting colonies. Foraging BIAs intersect the OA for several albatross (black-browed, buller's, campbell, Indian yellow-nosed, shy and wandering) and petrel (common diving, white-faced storm) species and the short-tailed shearwater, but no breeding BIAs are present. Species with breeding BIAs in the wider EMBA, as identified by the Australian Marine Spatial Information System (DCCEEW, 2025a), are shown in Table 6-8.

**Table 6-8: Breeding BIAs found in the EMBA**

| Species                  | Closest location to OA | Distance from OA | Direction      |
|--------------------------|------------------------|------------------|----------------|
| Little penguin           | Ninth Island           | 30 km            | East of the OA |
| Black-faced cormorant    | Ninth Island           | 30 km            | East of the OA |
| Common diving petrel     | East Islet             | 7 km             | West of the OA |
| Short-tailed shearwater  | East Islet             | 7 km             | West of the OA |
| White-faced storm petrel | Chalky Island          | 78 km            | East of the OA |
| White-fronted tern       | Little Dog Island      | 105 km           | East of the OA |

Based on the distance of behavioural changes identified by Woodside (2025 and 2020) from light emissions from a single vessel being less than 0.6 km, impacts on returning seabirds, nesting and breeding activity is unlikely to be impacted from TGP's activities.

Appendix C, shows that the only bird species likely to breed within the OA is the Tasmanian Wedge-tailed Eagle. Raptors tend to avoid hunting at night due to restricted vision, therefore light impacts on the Tasmanian Wedge-tailed Eagle is considered negligible. This is supported by the Threatened Tasmanian Eagle Recovery Plan: 2006-2010 (DPIW, 2006), not listing light as a threat to the species.

Many shorebirds are considered diurnal, it is the tidal cycle's influence on food availability that drive activity patterns rather than the day/night cycle (Esso, 2025a). Artificial lighting has been shown to influence the nocturnal foraging behaviour in shorebirds, often resulting in improved foraging success by increasing the availability of more successful visual foraging (Esso, 2025a).

Most seabird species are visual predators and forage most actively during the day. The Recovery Plan for Albatrosses and Petrels noted that individual species prefer to feed during the day or night (often by moonlight). With behavioural impacts associated with pipelaying vessels out to 0.6 km (Woodside, 2020) and navigation lighting impacts to 0.3 km from a vessel (Woodside Energy,

2025a), the risk consequence of lighting on foraging albatrosses and petrels would be Slight given there are no breeding sites within or near (< 5.7 km) the OA and species that are active night foragers tend to use moonlight to aid their activities.

Lighting may also attract foraging birds, leading to some becoming disorientated and confused and collide with the vessels, resulting in injury or death (Goad, et al., 2023). While bird vessel strikes have been recorded, the instances of large numbers of birds striking vessels are rare and tend to have been in areas adjacent to breeding colonies, fledgling periods and poor weather conditions (Goad, et al., 2023). As with other lighting impacts, discussed above, given the infrequent, temporary and transient nature of IMR activities in the OA; and that light sensitive breeding colonies are beyond the zone of potential behavioural impacts (0.6 km) and light impacts (5.7 km) the risk of seabirds colliding with the vessel would be low.

Impacts of light from the activity were assessed against the light mitigation toolbox in the National Light Pollution Guidelines for Wildlife (DCCEEW, 2023) (Table 6-9).

**Table 6-9: Assessment of Light Management Options for Seabirds from the National Light Pollution Guidelines for Wildlife (DCCEEW, 2023)**

| Management Option  | Achievable | Justification  |
|--|------------|--|
| Implement management actions during the breeding season.       | Yes        | Achievable management actions are identified in this table and in Appendix F (adopted control measures and associated EPSs).   |
| Maintaining a dark zone between the rookery and light sources. | Yes        | The nearest breeding BIA is located 7 km away from the operating area on East Islet. Creating a dark zone between potential rookeries and the activity area.   |
| Turn lights off during fledgling season.                       | No         | Operations are conducted 24-hours a day and light is necessary for personnel safety. Lighting will be directed to working areas and shutters and curtains will be installed on accommodation winds and the bridge (where it doesn't interfere with navigation). See Table 6-14 and Appendix F.   |
| Use curfews to manage lighting.                                | No         | As above.  |
| Aim lights downwards and direct them away from nesting areas   | Yes        | Where practicable, lights will be directed towards working areas for the safety of personnel. See Table 6-14 and Appendix F.   |
| Use flashing/intermittent lights instead of fixed beam.        | No         | Operations are conducted 24-hours a day and light is necessary for personnel safety. Lighting will be reduced to the furthest extent possible for safe operations. See Table 6-14 and Appendix F.  |
| Use motion sensors to turn lights on only when needed.         | No         | As above.  |
| Prevent indoor lighting reaching outdoor environment.          | Yes        | Light emitted from cabins is likely to be room lights of <60w or a bed light of 25w. The porthole, in which light can escape, is of a minimal size (30-60 cm). With the activity area being beyond any breeding BIA areas, this small light source is considered acceptable. For the bridge, blinds will be adopted where they do not interfere with navigation (CM39). See Table 6-14 and Appendix F. |
| Manage artificial light on jetties, wharves, marinas, etc.     | N/A        | Not applicable to this activity.   |

| Management Option   | Achievable | Justification  |
|---|------------|--|
| Reduce unnecessary outdoor deck lighting on all vessels and permanent and floating oil and gas installations in known seabird foraging areas at sea.  | Yes        | Lighting will be reduced to that required for safe operations and by maritime legislative requirements. See Table 6-14 and Appendix F.                               |
| Night fishing should only occur with minimum deck lighting.   | N/A        | Not applicable to this activity.   |
| Avoid shining light directly onto fishing gear in the water.  | N/A        | Not applicable to this activity.   |
| Ensure lighting enables recording of any incidental catch, including electronic monitoring systems.   | N/A        | Not applicable to this activity.   |
| Avoid shining light directly onto longlines and/or illuminating baits in the water.   | N/A        | Not applicable to this activity.   |
| Vessels working in seabird foraging areas during breeding season should implement a seabird management plan to prevent seabird landings on the ship, manage birds appropriately and report interaction. | N/A        | The closest breeding BIA is 7 km from the OA and behavioural impacts are estimated to be within 0.6 km from the light source.  |
| Use luminaires with special content appropriate for the species present.  | No         | The vessel is equipped with lighting required under maritime legislation and for safe operation. (CM35)<br>Vessel activities are infrequent and transient in nature. |
| Avoid high intensity light of any colour  | No         | As above.  |
| Shield gas flares and locate them inland and away from seabird rookeries.   | N/A        | Not applicable to this activity.   |
| Minimise flaring on offshore oil and gas production facilities.   | N/A        | Not applicable to this activity.   |

| Management Option  | Achievable | Justification   |
|--|------------|---|
| In facilities requiring intermittent night time inspections, turn on lights only while operators are moving around the facility. | N/A        | The vessel is equipped with lighting required under maritime legislation and for safe operation (CM35).   |
| Ensure industrial site/plant operators use head torches.   | No         | Operations are conducted 24-hours a day and lighting of all areas is necessary for personnel safety. The use of head torches is not necessary. Lighting will be reduced as far as practicable and in accordance with maritime requirements and personnel safety (CM35 and CM39). See Table 6-14 and Appendix F. |
| Supplement facility perimeter security lighting with computer-monitored infrared detection systems.                              | N/A        | Not applicable to this activity.  |
| Tourism operations around seabird colonies should manage torch use so birds are not disturbed.                                   | N/A        | Not applicable to this activity.  |
| Design and implement a rescue program for grounded birds.  | No         | Due to the distance between the activity area and seabird rookeries, grounding of birds is unlikely to occur and thus a rescue program is not necessary.  |

While no specific actions are noted for lighting in the National Recovery Plan for Albatrosses and Petrels, potential impacts from lighting were assessed against the applicable recovery actions, as shown in Table 6-10.

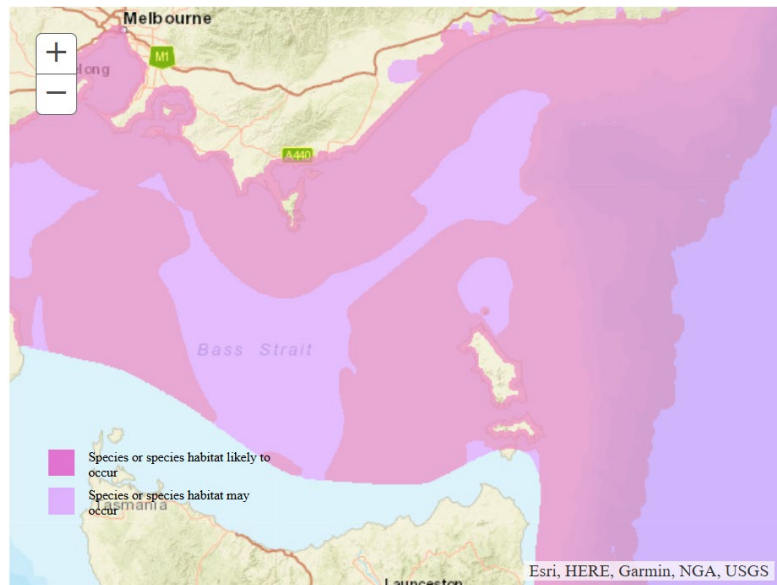
**Table 6-10: Assessment of Light Impacts against Actions in the National Recovery Plan for Albatrosses and Petrels (DCCEEW, 2022b) applicable to TGP activities**

| Recovery actions  | Justification  |
|---|--|
| A1: Ongoing protection of albatross and petrel species breeding sites and habitats in Australia's jurisdiction. | TGP's activities are located 7 km from the nearest breeding BIA at East Islet. It has been assessed that behavioural impacts from TGP's activities are limited to 0.6 km from the light source.<br><br>While operations are conducted 24-hours a day and lighting is necessary for navigation and personnel safety, lighting will be reduced as far as practicable (CM35 and CM39). See Table 6-14 and Appendix F. |
| - 1a: Rigorous biosecurity measures are implemented to reduce the risk of introduction of invasive species      | Not applicable to light impacts from TGP's activities.   |
| - 1b: Human disturbance is managed through limited access at breeding sites.                                    | Not applicable to light impacts from TGP's activities.   |

| Recovery actions   | Justification  |
|--|--|
| <ul style="list-style-type: none"> <li>- 1c: Assess the benefits of current and potential listings of albatross and petrel habitats on the Register of Critical Habitat.</li> </ul>  | <p>Not applicable to light impacts from TGP's activities.</p>  |
| <p>A7: Minimise the effects of marine debris, plastic and pollution.</p>   | <p>Light pollution is expected to return to background levels within 5.7 km from the light source, with behavioural impacts limited to 0.6 km from the light source. Additionally, TGP's activities will be infrequent and transient in nature.</p> <p>While operations are conducted 24-hours a day and lighting is necessary navigation and personnel safety, lighting will be reduced as far as practicable (CM35 and CM39). See Table 6-14 and Appendix F.</p> |
| <ul style="list-style-type: none"> <li>- 5b: Undertake, as feasible, monitoring of breeding colonies for marine debris, plastic and marine pollution impacts including, as a priority:             <ul style="list-style-type: none"> <li>- Incidence of oiled birds at nest</li> <li>- Levels of marine debris egestion and entanglement at nest</li> <li>- Effect of plastics and marine pollution</li> <li>- Develop baseline measures of levels of heavy metals and persistent organic pollutants</li> </ul> </li> </ul> | <p>Not applicable to light impacts from TGP's activities.</p>  |
| <ul style="list-style-type: none"> <li>- 5c: Risk based response strategies for marine pollution incidents are developed.</li> </ul>   | <p>Not applicable to light impacts from TGP's activities.</p>  |

#### 6.2.2.2.2. Reptiles

The effect of light on turtle behaviour and survivorship is likely to be of concern if it can be seen from turtle nesting beaches, nearshore or adjacent waters (DCCEEW, 2023a). There are no known BIA for turtles along the offshore TGP route, but the loggerhead turtle is listed as likely to breed in the OA. However, a further examination of the Protect Matters Search Tool and the Species Protection and Threats Database did not identify where breeding sites may occur, as illustrated in Figure 6-4 and has identified no habitat critical to marine turtles. The National Recovery Plan for Marine Turtles lists the main nesting sites in Western Australia and Queensland. The likelihood of light impacting adult or hatchling turtles in the OA is remote in the Bass Strait, with a minor risk consequence as a result of no impact on critical habitat or activity.



**Figure 6-4: Loggerhead turtle presence in the Bass Strait (Source: Species Profile and Threats Database (DCCEEW, 2025b))**

Potential impacts from lighting were assessed against the applicable recovery actions in the Recovery Plan for Marine Turtles in Australia (DoEE, 2017b) in Table 6-11.

**Table 6-11: Assessment of Light Impacts against the Actions in the Recovery Plan for Marine Turtles in Australia (DoEE, 2017b)**

| Description  | Justification  |
|--|--|
| A8 – Minimise Light Pollution  |  |
| Artificial light within or adjacent to habitat critical to the survival of marine turtles will be managed such that marine turtles are not displaced | <p>TGPPL activities within the OA are will be minimal – approximately two over the life of the EP, for approximately 4 weeks, each.</p> <p>There are no habitats identified as critical to the survival of marine turtles in the OA, as identified in Appendix C. The PMST has identified the presence of three marine turtle species, being the loggerhead, green and leatherback.</p> <p>The National Light Pollution Guidelines for Wildlife suggests a 20 km buffer around nesting beaches. There are no known nesting beaches in the OA.</p> <p>Adoption of the control measure to minimise lighting as far as possible, including the use of window blinds will reduce impacts on turtles.</p> |

### 6.2.2.2.3. Fish

Behavioural responses to artificial lighting vary among pelagic taxa. While some are known to be attracted to light, such as krill or plankton, some are known to avoid light (Marangoni, et al., 2022). The increase in species attracted to the light may result in an increased source of food for predatory species. The OA overlaps the White Shark foraging BIA and while pupping areas are unknown, juvenile White Sharks have been found to aggregate in the 90 Mile Beach area of eastern Victoria (DCCEEW, 2024g). The potential light disturbance is restricted to infrequent and transient vessels or USVs undertaking IMR activities. The presence of other threatened fish species with the OA is expected to be of a transient nature only. Vessels and USVs undertaking IMR activities will be present for short periods and are not expected to disrupt the lifecycle of an ecologically significant proportion of any shark or fish species.

#### 6.2.2.2.4. Cetaceans

Protected cetaceans are unlikely to breed or rest in the offshore sections of the TGP, however may be found close to onshore sections in the State Waters. A reproducing BIA, in coastal waters and migrating BIA for the southern right whale, and foraging BIA for the pygmy blue whale overlap the OA. Other species of cetaceans are also likely to occur within the OA (refer to Appendix C). Lighting may result in a temporary and localised increase in food sources for cetaceans, that may in turn attract cetaceans. The temporary and transient nature of artificial lighting associated with vessels are not expected to disrupt the lifecycle of an ecologically significant proportion of any cetacean species.

#### 6.2.2.2.5. Australian Marine Park

The OA overlaps the Beagle Marine Park. The South-east Marine Parks Network Management Plan (DNP, 2025) lists the natural values of the Beagle Marine Park as a biologically important foraging area for many seabirds, white shark, southern right whale and pygmy blue whale. It also notes that humpback whales and short-tailed shearwaters are culturally significant species. Impacts of lighting on cetaceans, seabirds and turtles have been discussed above.

A key ecological feature of the Beagle Marine Park is shelf rocky reefs and hard substrate. Corals are highly photosensitive and artificial lighting can have negative impacts on coral health, due to increased stress, and reproduction (Marangoni, et al., 2022). The infrequent, temporary and transient nature of TGP’s IMR activities is not expected to have any significant or long-term impacts to coral behaviours.

The magnitude of impact to the Beagle Marine Park from artificial lighting will be “no lasting effect” given the localised and temporary nature of any effects as described above.

#### 6.2.2.2.6. Overall Impact

The risk of disturbance to marine fauna associated with vessel lighting is considered low with regards to the Offshore EP activities, as discussed above.

### 6.2.3 ERA Summary

The risk assessment associated with protection of marine fauna is summarised in Table 6-12.

**Table 6-12: ERA Summary**

| Activity   | Potential incident / hazard                               | Potential environmental impacts  | Residual risk |
|--|---|----------------------------------|---------------|
| Offshore TGP inspection or maintenance using vessels, USV and equipment (e.g. ROV / AUV, SSS). | Vessel movements – vessel strike                          | Injury or death to marine fauna. | Low           |
|  | Artificial lighting on inspection and maintenance vessels | Disturbance to marine fauna.     | Low           |

### 6.2.4 Environmental Control Measures

The following controls measures have been adopted to ensure appropriate environmental management of Offshore TGP inspection and maintenance activities to reduce the risk of impacts to marine fauna to ALARP:

- **CM1:** Marine mammal interaction management actions (A6, A2.1, A5.2)<sup>1</sup>
- **CM2:** Environmental Inductions (A2.1, A5.2, A5.4)<sup>1</sup> (A2.4)<sup>2</sup>
- **CM3:** Cetacean pre-start procedure (A2.1, A5.2, A5.4)<sup>1</sup> (A2.4)<sup>2</sup>
- **CM35:** Navigational equipment
- **CM39:** Lighting<sup>3</sup> (A1, A7)<sup>4</sup> (A8)<sup>5</sup>

- **CM40:** Cetacean sightings (A.6.5)<sup>1</sup> (A.4.2)<sup>2</sup>
- **CM41:** End of survey cetacean report
- **CM42:** Maintaining seabird records and reporting
- **CM43:** Cetaceans operations procedure (A2.1, A5.2, A5.4)<sup>1</sup> (A2.4)<sup>2</sup>
- **CM52:** Cetacean observations (A2.1, A5.4)<sup>1</sup> (A2.3, A2.4)<sup>2</sup>
- **CM53:** Cetaceans night-time and low visibility procedure (A2.1, A5.2, A5.4)<sup>1</sup> (A2.4)<sup>2</sup>

Note: <sup>1</sup> National Recovery Plan for Southern Right Whale  
<sup>2</sup> Conservation Management Plan for the Blue Whale  
<sup>3</sup> National Light Pollution Guidelines for Wildlife  
<sup>4</sup> National Recovery Plan for Albatrosses and Petrels  
<sup>5</sup> Recovery Plan for Marine Turtles in Australia

Refer to Appendix F for corresponding descriptions of EPOs, EPSs and measurement criteria.

### 6.2.5 Assessment of ALARP

Given the control measures listed above, and the infrequent nature, relatively small scale and short duration of Offshore TGP inspection and maintenance activities, the risk of disturbance to marine fauna is considered low and therefore ALARP.

**Table 6-13: ALARP Decision Context and Justification**

| ALARP Decision Context | Justification   |
|------------------------|---|
| A                      | <p>Offshore commercial vessel operations and associated light emissions are commonplace in offshore environments nationally and internationally.</p> <p>The risk of cetacean vessel strike is well managed through legislative controls that are considered industry best practice.</p> <p>Vessel operations are infrequent (&lt;1 every 2 years) and of short duration (generally less than 4 weeks).</p> <p>During consultation with relevant persons, no objections or claims regarding impact on marine fauna were made.</p> <p>TGPPL believes ALARP Decision Context A should apply.</p> |

**Table 6-14: Good Practice Controls**

| Good Practice   | Control  | Rationale   |
|---|--|---|
| <p>Part 8 Division 8.1 of the EPBC Regulations.</p> <p>Australian National Guidelines for Whale and Dolphin Watching 2017</p> | <p><b>CM1:</b> Marine mammal interaction management actions</p> <p><b>CM2:</b> Environmental inductions</p> <p><b>CM3:</b> Cetacean pre-start procedure</p> <p><b>CM52:</b> Cetacean observations</p> <p><b>CM43:</b> Cetaceans operations procedure</p> | <p>The Vessel Master/USV operator has responsibility for ensuring the requirements of these Regulations and Guidelines are followed.</p> <p>The Guidelines describe strategies to ensure cetaceans are not harmed during vessel operations.</p> |

| Good Practice   | Control  | Rationale   |
|---|--|---|
|   | <p><b>CM40:</b> Cetacean sightings</p> <p><b>CM41:</b> End of survey cetacean report</p> <p><b>CM53:</b> Cetaceans night-time and low visibility procedure</p> |   |
| Marine Order 30 (Prevention of Collisions) 2016         | <b>CM35:</b> Navigation equipment  | TGPPL will ensure vessel will comply with Marine Order 30, with regards to navigational lighting requirements.  |
| National Light Pollution Guidelines for Wildlife (2023) | <p><b>CM39:</b> Lighting</p> <p><b>CM42:</b> Maintaining seabird records and reporting</p>   | <p>Controls will be implemented to minimise the lighting onboard vessels to that required for personnel to conduct their activities in a safe manner, and minimise light spill, including the use of blinds on windows.</p> <p>Actions relative to breeding season for light sensitive seabird species have not been adopted due to:</p> <ul style="list-style-type: none"> <li>- the absence of breeding BIAs in the OA</li> <li>- Nesting locations identified in the breeding BIAs lie beyond the distance of modelled behavioural impacts (at 0.6 km) and where light is expected to return to background levels (at 5.7 km) that may forage in the EMBA. The closest breeding BIA location is at East Islet located 7 km from the OA.</li> </ul> <p>Reporting will be undertaken as per Section 8.6.</p> |

**Table 6-15: Engineering Risk Assessment**

| Additional, alternative control  | Benefit   | Cost/feasibility   | Adopted      |
|--|---|--|--------------|
| Avoid white LEDs, high-intensity lights of any colour, lights containing short-wavelength violet/blue light      | LED or short-wavelength lighting or high intensity lights can impact behaviour of marine species.   | Due to the infrequency of IMR activities associated with TGP, vessels are generally hired on the spot market rather than long term contracts. In addition, vessel hire is for a short-term period. As such, the opportunity to modify lighting will incur significant costs and time delays. | Not adopted. |
| Lighting modifications (shielding, directional lighting) to minimise over water light spill and light emissions. | Reduced light spill over water and overall light glow from a vessel can reduce the likelihood that marine species behaviour will be influenced. | While lighting could be modified, the financial cost and time associated with implementing these changes outweighs the benefit gained.   | Not adopted. |

| Additional, alternative control   | Benefit  | Cost/feasibility  | Adopted  |
|---|--|---|--|
| Conduct IMR activities outside of the Loggerhead turtle hatching season (December to April) | The Recovery Plan for Marine Turtles (2017) states that vessel lighting can attract swimming hatchlings and increase their risk of predation. Loggerhead Turtle hatchlings emerge between December and April. Avoiding activities during hatching season prevents behaviour modification associated with artificial lighting from TGP in hatchlings. | Given the nature of IMR activities it is not always possible to plan when they will occur. Additionally, the presence of nesting beaches in the OA is doubtful. Therefore, any benefit is outweighed by the gain. | Not adopted based on low risk and no critical habitat being present in OA. |

## 6.2.6 Demonstration of Acceptability

**Table 6-16: Demonstration of Acceptability Test**

| Factor                             | Demonstration criteria  | Rationale  |
|------------------------------------|---|--|
| Principles of ESD                  | No potential to affect biological diversity and ecological integrity.                           | TGP operations were assessed to have a minor risk consequence from vessel strikes and a slight risk consequent from light emissions. This is not considered to have the potential to result in serious or irreversible environmental damage; or potentially affect biological diversity and ecological integrity.<br>No further evaluation against the principles of ESD is required.  |
|                                    | Activity does not have the potential to result in serious or irreversible environmental damage. |  |
| Legislative and other requirements | Legislative and other requirements have been identified and met.                                | The control measures proposed in Section 6.2.4 to manage this risk meet all relevant standards (Industry best practice) and Australian legislative requirements, including: <ul style="list-style-type: none"> <li>• Navigation Act 2012</li> <li>• EPBC Regulations – Part 8 Division 8.1: Interacting with cetaceans</li> <li>• National Recovery Plan for Southern Right Whale 2024</li> <li>• National Light Pollution Guidelines for Wildlife</li> <li>• Wildlife Conservation Plan for Migratory Shorebirds</li> <li>• Wildlife Conservation Plan for Seabirds</li> <li>• National Recovery Plan for Albatrosses and Petrels 2022</li> <li>• Recovery Plan for Marine Turtles in Australia, 2017-2027</li> </ul> |

| Factor                | Demonstration criteria  | Rationale  |
|-----------------------|---|--|
| Internal context      | Consistent with TGP Environment Policy Statement.   | Proposed activities are consistent with the TGP Environment Policy Statement, in particular “comply with all relevant legislation, regulations, codes of practice and standards” and “conducting all activities in a manner consistent with the principles of sustainable management and caring for the environment.”  |
| External context      | Relevant person concerns have been considered/addressed through the consultation process. | From consultation, no additional environmental impacts or control measures were identified, however Tuna Australia emphasised the importance and value of SBT and ETBF species in the region and the migratory pathways (refer to Table 10-3). The control measures as described are consistent with this feedback and agreed to demonstrate consideration and appropriate management of environmental impacts to these species and BIA’s. |
| Acceptability outcome | <b>Acceptable</b>   |  |

## 6.3 Physical Presence – Seabed Disturbance

**Table 6-17: Impact/Risk Evaluation Summary**

| Source of Impact/Risk                             | Environmental Value Potentially Impacted |               |             |                     |         |                | Evaluation    |                 |             |              |               |
|---|--|---------------|-------------|---------------------|---------|----------------|---------------|-----------------|-------------|--------------|---------------|
|   | Seabed Sediment                          | Water Quality | Air Quality | Ecosystem / Habitat | Species | Socio-economic | Decision Type | Likelihood      | Consequence | Risk Ranking | Acceptability |
| Vessel mooring or anchoring                       | ✓  | ✓             |             | ✓                   |         |                | A             | Highly unlikely | Slight      | Low          | Acceptable    |
| Dropped objects from Vessels                      | ✓  | ✓             |             | ✓                   |         |                |               | Highly unlikely | Slight      | Low          |               |
| Placement of concrete mattress over damaged areas | ✓  | ✓             |             | ✓                   |         |                |               | Remote          | Trivial     | Low          |               |
| Placement and filling of grout bags               | ✓  | ✓             |             | ✓                   |         |                |               | Remote          | Trivial     | Low          |               |
| Jetting to correct spans outside of specification | ✓  | ✓             |             | ✓                   |         |                |               | Remote          | Trivial     | Low          |               |

The entire offshore component of the TGP traverses a marine environment which includes Victorian and Tasmanian coastal waters and the sea strait of Bass Strait.

A few ecologically significant areas are identified along sections of the Offshore TGP route which have important environmental features including the significant fauna communities in Section 4.3. These include a number of Commonwealth or State declared marine reserves, most of which (except for the Beagle Australian Marine Park) lie outside the Offshore TGP area (refer to Section 4.6).

### 6.3.1 Impact of Activities

There are no expected impacts to the marine environment during the normal day to day operation of the Offshore TGP. Daily pipeline operations (i.e. continuous transport of gas) are completely internal to the pipeline with monitoring through the SKADA system as described in Section 2.2.1.1, with no offshore activities or external effects during standard operating conditions.

For planned activities, impacts to the seabed will potentially occur during Offshore TGP inspection and maintenance activities and include:

- Vessel anchor or inspection / maintenance equipment dragging along the seabed
- Dropped objects from vessels (including inspection and maintenance equipment)

### 6.3.2 Identification of Environmental Risks

The key potential impacts to the marine environment in proximity to the Offshore TGP during pipeline inspection and maintenance activities are:

#### 6.3.2.1 Disturbance to sensitive benthic marine ecosystems, heritage and cultural heritage sites due to dropped objects or dragging of vessel anchors or inspection / maintenance equipment on the seabed

Damage to the seabed from Offshore TGP inspection and maintenance activities is only considered likely in the event of a dropped object from the vessel or ROV / AUV, because of emergency

anchoring or repair activities such as jetting to remove high points, installation of concrete mattresses or grout bags.

As stated in Section 4.2, the substrate along the Offshore TGP route represents a largely homogenous habitat type, which is not significantly diverse from other regions within Bass Strait. Furthermore, it is expected that recolonisation and recovery would occur relatively quickly following any disturbance resulting in no long-term disturbance to the infauna communities (Dernie, Kaiser, Richardson, & Warwick, 2003).

The occasional use of inspection equipment such as ROV/AUV and SSS may have potential for minor physical impacts as they pass through the survey area. However, the small size of the equipment and its position above the pipeline within the water column ensures no disruption to the seabed or epibenthos.

Inspection and maintenance vessels will avoid anchoring (unless in an emergency). In the event of inclement weather, the vessels will seek shelter nearer the coast or at a designated port in Victoria or Tasmania. In the highly unlikely event that vessels must anchor, any impacts on the benthic marine environment will be localised.

Seabed disturbance may include localised and temporary water quality decline due to increased sediment suspension. However, sediment loads are not expected to be significant due to the small footprint of the vessel and the limited duration of the activity. Elevations in turbidity will be intermittent and temporary in nature and will disperse rapidly in the high energy environment of the Bass Strait. Similarly, any removal of marine growth during IMR activities on an as-needs basis would cause localised temporary decrease in water quality and suspended sediment from water jetting activities.

### 6.3.2.2 Disturbance to benthic marine habitats, heritage and cultural heritage due to maintenance activities e.g. jetting to remove high points, installation of grout bags or concrete mattresses.

Installing grout bags or concrete mattresses may cause some disturbance of the seabed and potentially impact associated benthic organisms. Any impact will be limited to the immediate vicinity of the pipeline and thus the extent is considered to be quite localised.

### 6.3.3 ERA Summary

The risk assessment associated with protection of the marine environment is summarised in Table 6-18.

**Table 6-18: ERA Summary**

| Activity   | Potential incident / hazard  | Potential environmental impacts                     | Residual risk |
|--|--|---|---------------|
| Offshore TGP inspection or maintenance using vessels and equipment (e.g. ROV / AUV and SSS). | Dropped objects from vessels (including inspection and maintenance equipment)  | Disturbance to sensitive benthic marine ecosystems. | Low           |
|  | Vessel anchors or inspection / maintenance equipment dragging along the seabed |   |               |
|  | Pipeline maintenance activities (e.g. span correction)                         |   |               |

### 6.3.4 Environmental Control Measures

The following controls and mitigation measures have been adopted to ensure appropriate environmental management of Offshore TGP inspection and maintenance activities to reduce the risk of impacts to the marine environment to ALARP:

- **CM2: Environmental Inductions**

- **CM4:** No anchoring
- **CM5:** Lifting procedures
- **CM6:** Maintenance and repair procedures
- **CM8:** Planned Maintenance System (PMS) – Lifting gear
- **CM9:** Cargo Securing Manual
- **CM10:** Procedure to recover dropped objects
- **CM46:** Monitoring and removal of temporarily stored equipment on the seabed.
- **CM47:** Cultural heritage protection
- **CM48:** Underwater Cultural Heritage Identification procedure

The environmental performance outcomes and environmental performance standards for the controls above are given in Appendix F.

### 6.3.5 Assessment of ALARP

Given the control measures listed above, and the infrequent nature, relatively small scale and short duration of Offshore TGP inspection and maintenance activities, the risk of disturbance to the marine environment is considered extremely low and therefore ALARP.

As requested through consultation with the Director of National Parks, an evaluation of the impact on ecosystem values is explored in this section, and the control measures demonstrate reduction of risks to ALARP as requested.

**Table 6-19: ALARP Decision Context and Justification**

| ALARP Decision Context | Justification   |
|------------------------|---|
| A                      | <p>Seabed disturbance from offshore activities is well understood both nationally and internationally.</p> <p>Vessel operations are infrequent (&lt;1 every 2 years) and of short duration (generally less than 4 weeks). Impacts to the seabed from inspection and maintenance activities are well understood and executed in a controlled manner by industry. The area of disturbance is known and identified as having a Slight (lowest) consequence level.</p> <p>During consultation with relevant persons, no objections or claims regarding impact on the seabed were made.</p> <p>TGPPL believes ALARP Decision Context A should apply.</p> |

**Table 6-20: Good Practice Controls**

| Good Practice     | Control   | Rationale   |
|-------------------|---|---|
| No anchoring      | <b>CM4:</b> No anchoring (unless in an emergency)   | To minimise disturbance to the seabed, anchors will not be deployed.  |
| Lifting equipment | <b>CM5:</b> Lifting procedures<br><b>CM8:</b> Planned Maintenance System (PMS) – lifting gear | Lifting procedures are in place and implemented by crane operators (and others such as dogmen).<br>Visual inspection of lifting gear is undertaken every quarter by a qualified competent person (e.g. maritime officer) and lifting gear is tested regularly in line with the PMS. |

| Good Practice   | Control   | Rationale  |
|---|---|--|
| Pipeline maintenance and repair   | <b>CM6:</b> Maintenance and repair procedures                                     | All pipeline maintenance activities (i.e. jetting, installing concrete mattress/grout bags) is undertaken in accordance with approved procedures.  |
| Cargo securing  | <b>CM9:</b> Cargo Securing Manual   | Cargo is securely fastened and stored in accordance with approved Cargo Securing Manual.   |
| Recovering dropped objects  | <b>CM10:</b> Procedure to recover dropped objects                                 | Where equipment/objects are lost overboard they are recovered in accordance with an approved procedure.  |
| Complying with OPGGS Act Section 572 all equipment is removed when neither used nor to be used in connection with the operations. | <b>CM46:</b> Monitoring and removal of temporarily stored equipment of the seabed | Dropped objects or equipment temporarily stored on the seabed will be removed following maintenance and repair activities. Where this is not possible an assessment will be complete to identify the impacts associate with temporary storage. A tracking and removal program will be developed. |

**Table 6-21: Engineering Risk Assessment**

| Additional, alternative control  | Benefit  | Cost/feasibility       | Adopted                 |
|--|--|------------------------|-------------------------|
| Unexpected finds of potential underwater cultural heritage are managed in accordance with Underwater Cultural Heritage Identification Procedure set out in Section 8.6.9.  | Allows management of new finds in accordance with legislative requirements (including Underwater Cultural Heritage Guidance for Offshore Developments and the Assessing and Managing Impacts to Underwater Cultural Heritage in Australian Waters - Guidance on the application of the Underwater Cultural Heritage Act 2018), expert advice and community expectations. | Benefits outweigh cost | Adopted (CM47 and CM48) |
| Relevant IMR vessel crew, USV remote operators and ROV operators will be advised in an induction of the potential to encounter underwater cultural heritage and requirement to follow the Unexpected Finds Procedure (Section 8.6.9) | Ensures workforce are suitably aware of legal and process requirements for managing cultural features and heritage values.   | Benefits outweigh cost | Adopted (CM2)           |
| Report any potential underwater cultural heritage finds to relevant persons and authorities in   | Meets legislative requirements and community expectations  |                        | Adopted (CM48)          |

| Additional, alternative control   | Benefit  | Cost/feasibility   | Adopted     |
|---|--|--|-------------|
| accordance with the Underwater Cultural Heritage Procedure, Underwater Cultural Heritage Act 2018                       |  |  |             |
| Do not use ROV close to, or on the seabed.  | Not assessed, control not feasible.  | The use of ROVs (including work close to or occasionally landed on the seabed) is critical as the ROV is the main tool used to guide and manipulate equipment during drilling. ROV usage is already limited to only that required to conduct the work effectively and safely. Due to visibility and operational issues ROV work on or close to the seabed is avoided unless necessary. | Not adopted |
| Monitoring and maintenance of subsea infrastructure to manage scour and flowline movement to within integrity envelope. | Limited environmental benefit (information) gained from monitoring benthic habitats. | Given the sparsely populated infauna habitat and low sensitivity of the environment surrounding the FPU and associated subsea infrastructure, any environmental benefit gained is outweighed by costs associated with implementing control.  | Not adopted |

### 6.3.6 Demonstration of Acceptability

**Table 6-22: Demonstration of Acceptability Test**

| Factor                             | Demonstration criteria  | Rationale   |
|------------------------------------|---|---|
| Principles of ESD                  | No potential to affect biological diversity and ecological integrity.                           | The potential impacts associated with this aspect are considered localised and short-term. It is not considered to have the potential to affect biological diversity or ecological integrity.   |
|                                    | Activity does not have the potential to result in serious or irreversible environmental damage. | The activities were evaluated as having the potential to result in a Consequence Level – Slight. This is not considered to have the potential to result in serious or irreversible environmental damage.  |
| Legislative and other requirements | Legislative and other requirements have been identified and met.                                | <p>The activities align with the requirements of the OPGGS Act:</p> <ul style="list-style-type: none"> <li>Section 280(2) – No interference with conservation of the resources of the sea and seabed to a greater extent than is necessary for the exercise of the rights conferred by titles granted.</li> </ul> |

| Factor                | Demonstration criteria  | Rationale  |
|-----------------------|---|--|
|                       |   | <ul style="list-style-type: none"> <li>Section 572 – Requirement to remove from the relevant title areas structures and all equipment and other property that is neither used nor to be used in connection with the operations.</li> </ul> <p>Given the scale and nature of IMR activities associated with TGP, with the control measures listed in Section 6.3.4, under the Marine and Coastal (Prescribed Consents) Regulations 2025, TGP is exempt from requiring a consent to conduct works in marine and coastal crown land. A permit would be required if the work:</p> <ul style="list-style-type: none"> <li>removes or damages native vegetation,</li> <li>harms an aboriginal place or aboriginal object,</li> <li>involves the excavation of the seabed that is not associated with the repair or maintenance.</li> </ul> |
| Internal context      | Consistent with TGP Environment Policy Statement.   | Proposed activities are consistent with the TGP Environment Policy Statement, in particular “comply with all relevant legislation, regulations, codes of practice and standards” and “conducting all activities in a manner consistent with the principles of sustainable management and caring for the environment”.  |
| External context      | Relevant person concerns have been considered/addressed through the consultation process. | No specific relevant person concerns have been raised concerning seabed disturbance.   |
| Acceptability outcome | <b>Acceptable</b>   |  |

## 6.4 Physical Presence – Interaction with Other Marine Users

**Table 6-23: Impact/Risk Evaluation Summary**

| Source of Impact/Risk   | Environmental Value Potentially Impacted |               |             |                     |         |                | Evaluation    |                 |             |              |               |
|---|--|---------------|-------------|---------------------|---------|----------------|---------------|-----------------|-------------|--------------|---------------|
|   | Seabed Sediment                          | Water Quality | Air Quality | Ecosystem / Habitat | Species | Socio-economic | Decision Type | Likelihood      | Consequence | Risk Ranking | Acceptability |
| Presence of vessels interfering with or displacing other users in OA                                |  |               |             |                     |         | ✓              | A             | Remote          | Slight      | Low          | Acceptable    |
| Interference to commercial fishing activities, including damage to fishing equipment from anchoring |  |               |             |                     |         | ✓              |               | Highly unlikely | Slight      | Low          |               |
| Timing and location of ROV / AUV activities within OA   |  |               |             |                     |         | ✓              |               | Highly unlikely | Slight      | Low          |               |

The movement of vessels within the OA, and the physical presence of vessels, USVs and ROVs/AUVs has the potential to result in interactions with other marine users such as commercial and recreational fishing vessels, and merchant shipping vessels.

In order to manage shipping interactions, TGPPL issues a Notice to Mariners prior to undertaking any offshore works in order to minimise the risk of collisions during marine operations.

At the completion of IMR activities, there will be no additional areas of seabed covered or excluded from other marine user's access. There will be no change to interaction between the fishing industry and the TGP pipeline.

Removal of the pipeline will be assessed as part of TGPPL's decommissioning program as described in Section 2.1.5.1, and will be subject to a specific decommissioning EP to be developed and submitted for regulatory acceptance at the appropriate time when gas transportation ceases.

This section is specifically dealing with displacement or interference in a socioeconomic sense, such as changes to the function, interest or activities of other users through disrupting commercial activities. This includes:

- Diversion from the navigation path (displacement of third-party vessels)
- Loss of access near the pipeline (exclusion from fishing grounds and subsequent loss of catch)
- Obstacle to trawling (presence of infrastructure)

### 6.4.1 Impact of Activities

As detailed in Section 4.5, a wide range of human activities occur in the waters of Bass Strait, including commercial oil and gas fields, other energy infrastructure such as offshore wind turbines, shipping, commercial and recreational fishing, and other recreational activities.

Due to the placement of the Offshore TGP on the seabed at water depths of up to approximately 80m, there will be no impacts to other users of Bass Strait during normal day to day operation of the subsea pipeline.

Impacts to other users of the marine environment will only potentially occur during Offshore TGP inspection and maintenance activities.

#### 6.4.2 Identification of Environmental Risks

Inspection and maintenance vessels are expected to be required less than twice in 5 years on average, with the expected duration of any one voyage likely to be less than 4 weeks. Refer to Section 2.2.1 on the planned activities. Any activities undertaken by TGPPL are localised along the pipeline route, with most activities generally not stationed at any one location for any significant period of time.

The key potential impacts to other users of the marine environment in proximity to the Offshore TGP during subsea pipeline inspection and maintenance activities are:

##### 6.4.2.1 Commercial Fisheries

Potential impacts to commercial fisheries include loss of commercial catch due to displacement from fishing grounds and potential damage to fishing gear.

The OA overlaps eight Commonwealth and 13 Victorian and 11 Tasmanian managed commercial fisheries management areas. The presence of the pipeline may provide habitat for commercially targeted fish species. Fisheries have little or no potential to interact with the pipeline, as it has been designed to minimise snagging from trawling gear and fishing that uses divers, lines, traps or pots will have little or no interaction with the pipeline.

The use of inspection equipment such as ROV/AUV and SSS could potentially cause minor disturbance to user marine users (particularly commercial fishing activities), however, this is highly unlikely due to the infrequent use, small size of the equipment and the fact that the equipment is towed near the stern of the vessel.

Inspection and maintenance vessels will avoid anchoring (unless in an emergency) and, therefore, potential damage to commercial fishing equipment through dragging anchors is also highly unlikely.

Tuna Australia have raised the concern of cumulative impacts of energy exploitation in the Bass Strait and Gippsland region. The TGP pipeline infrastructure was commissioned in 2002. During normal day to day operations there will be no activity in the OA, outside of the physical presence of the pipeline on the seabed. TGP has been owned and operated by TGPPL since 2011. The level of IMR activity in the OA has remained low, with infrequent pipeline surveys occurring one to two times in a five-year period for a short period of time, approximately up to four weeks, transiting along the pipeline route. There is no proposal to increase activity in the OA over the next five years. It should be noted that IMR activities will be conducted by a single vessel and by nature of the IMR activities will not remain in one location on the pipeline route for more than a few days. TGP lies approximately 3 km to the west of Esso's Perch/Dolphin pipeline and de-staffed platform infrastructure. Due to the low level of activity, TGP's IMR activities are not expected to significantly increase existing energy exploitation activities in the region and in turn increase disruption to commercial fishing.

Impacts to fisheries will be limited to temporary, localised and transient displacement due to the vessels undertaking work in the OA. TGP's offshore activities will not result in an increase to existing Areas to be Avoided.

##### 6.4.2.2 Tourism and Recreation

Tourism and recreation within the OA are expected to be limited by the distance offshore and water depths. Some tourism and recreation occur in the nearshore waters, particularly in State managed waters. However, impacts are expected to be limited by the short duration and infrequent nature of vessel activities in these locations. Potential impacts to tourism and recreational activities would likely be a minor interference (i.e. navigational hazard) and temporary, localized displacement or avoidance.

### 6.4.2.3 Shipping

The pipeline intersects the major shipping channel, that traverses southern Australia, near the coast of Victoria. The Geelong to Devenport Ferry passes to the west of TGP and will not be impacted by activities in the OA. Figure 4-5 shows the vessel transit and density across the Bass Strait. Despite the significant shipping activity within or adjacent to the OA, impacts from TGP's activities are expected to be low. This is based on the low numbers and infrequent presence of vessel in the OA. Based on the nature of activities, vessel movements will be transient and temporary.

### 6.4.2.4 Industry

Oil and gas facilities are located over 3 km to the east of TGP's OA, including platforms and pipelines. Activities associated with the occasional physical presence of vessels conducting IMR activities along the pipeline route may result in localised, short-term interference to industry vessels requiring minor course alteration or readjustment in asset management while the Petroleum Activities Program is active in the area. However, impacts are not expected to have lasting effect.

### 6.4.3 ERA Summary

The risk assessment associated with protection of other marine users is summarised in Table 6-24.

**Table 6-24: ERA Summary**

| Activity   | Potential incident / hazard  | Potential environmental impacts  | Residual risk |
|--|--|--|---------------|
| Offshore TGP inspection or maintenance using vessels | Vessel movements   | Disruption to other marine users such as commercial fishing (including damage to fishing equipment). | Low           |
|  | Vessel anchoring   |  |               |
|  | Towing of inspection / maintenance equipment (e.g. ROV / AUV and SSS) behind vessels |  |               |

### 6.4.4 Environmental Control Measures

The following controls and mitigation measures have been adopted to ensure appropriate environmental management of Offshore TGP inspection and maintenance activities to reduce the risk of impacts to other marine users to ALARP:

- **CM11:** Pre-start notifications
- **CM12:** Navigational Charts
- **CM13:** Vessels to adhere to the navigation safety requirements including the Navigation Action 2012 and subsequent Marine Orders

The environmental performance outcomes and environmental performance standards for the controls above are given in Appendix F.

### 6.4.5 Assessment of ALARP

Given the control measures listed above, and the infrequent nature, relatively small scale and short duration of Offshore TGP inspection and maintenance activities, the risk of disturbance to other marine users is considered extremely low and therefore ALARP.

**Table 6-25: ALARP Decision Context and Justification**

| ALARP Decision Context | Justification  |
|------------------------|--|
| A                      | <p>Offshore pipeline maintenance and inspection activities are widely undertaken locally, nationally and internationally.</p> <p>Vessel operations are infrequent (&lt;1 every 2 years) and of short duration (generally less than 4 weeks). Impacts associated with marine user interactions are well managed via legislative control measures. These controls are understood and well implemented by industry.</p> <p>During consultation with relevant persons, no objections or claims regarding impact on interaction with other marine users were made.</p> <p>TGPPL believes ALARP Decision Context A should apply.</p> |

**Table 6-26: Good Practice Controls**

| Good Practice                               | Control   | Rationale  |
|---|---|--|
| Pre-start notifications                     | <b>CM11:</b> Pre-start notifications  | <p>Under the Navigation Act, the AHS is responsible for maintaining and disseminating nautical information including: Notices to Mariners.</p> <p>AHS will be notified to allow for the generations of Notice to Mariners.</p> |
| Mapping of the pipeline route               | <b>CM12:</b> Navigational charts  | TGP and AMSA safety zones has been included on marine navigation charts.   |
| Adherence to navigation safety requirements | <b>CM13:</b> Vessels to adhere to the navigation safety requirements including the Navigation Act 2012 and any subsequent Marine Orders | Marine Order 21, regulates vessel related activities and invokes controls for safety and emergency response, so as to not adversely impact others.   |

**Table 6-27: Engineering Risk Assessment**

| Additional, alternative control   | Benefit                                  | Cost/feasibility  | Adopted      |
|---|--|---|--------------|
| Limit activities to avoid peak shipping and commercial fishing activities | Not considered – control is not feasible | <p>Not assessed as control is not feasible.</p> <p>Shipping occurs year-round and cannot be avoided. Due to the diverse fisheries that occur in and around the OA, fishing activity will be present year-round.</p> | Not adopted. |

## 6.4.6 Demonstration of Acceptability

**Table 6-28: Demonstration of Acceptability Test**

| Factor                             | Demonstration criteria  | Rationale  |
|------------------------------------|---|--|
| Principles of ESD                  | No potential to affect biological diversity and ecological integrity.                           | The potential impacts associated with this aspect are considered localised and short-term. It is not considered to have the potential to affect biological diversity or ecological integrity.  |
|                                    | Activity does not have the potential to result in serious or irreversible environmental damage. | The activities were evaluated as having the potential to result in a Consequence Level – Slight. This is not considered to have the potential to result in serious or irreversible environmental damage.   |
| Legislative and other requirements | Legislative and other requirements have been identified and met.                                | <p>Legislation and other requirements considered relevant include:</p> <p>OPGGS Act, Section 280 requires a person carrying on activities in an offshore area must carry on these activities in a manner that does not interfere with navigation or fishing and others to greater extent than necessary for the exercise of the rights conferred by the titles granted.</p> <p>Navigation Act, Chapter 6, Part 6 deals with safe navigation including provision of reporting vessel movements. (CM11 and Cm13)</p> |
| Internal context                   | Consistent with TGP Environment Policy Statement.   | Proposed activities are consistent with the TGP Environment Policy Statement, in particular “comply with all relevant legislation, regulations, codes of practice and standards”.  |
| External context                   | Relevant person concerns have been considered/addressed through the consultation process.       | Through consultation, the main issues raised were concerns of notification of activities by government departments and fishery groups. TGPPL has ensured within the control measures to support relevant person engagement and awareness of vessel activity through notifying of inspection and maintenance activities to be conducted on TGP.   |
| Acceptability outcome              | <b>Acceptable</b>   |  |

## 6.5 Routine Noise Emissions

**Table 6-29: Impact/Risk Evaluation Summary**

| Source of Impact/Risk  | Environmental Value Potentially Impacted |               |             |                     |         |                | Evaluation    |                 |             |              |               |
|--|--|---------------|-------------|---------------------|---------|----------------|---------------|-----------------|-------------|--------------|---------------|
|  | Seabed Sediment                          | Water Quality | Air Quality | Ecosystem / Habitat | Species | Socio-economic | Decision Type | Likelihood      | Consequence | Risk Ranking | Acceptability |
| Underwater noise generated from crewed and uncrewed vessels              |  |               |             |                     | ✓       |                | A             | Highly Unlikely | Minor       | Low          | Acceptable    |
| Underwater noise generated from geophysical sources during IMR surveys   |  |               |             |                     | ✓       |                |               | Highly Unlikely | Minor       | Low          |               |
| Transitory underwater noise from pig movement through pipeline           |  |               |             |                     | ✓       |                |               | Remote          | Trivial     | Low          |               |
| Vortex induced vibrations along the pipeline leading to underwater noise |  |               |             |                     | ✓       |                |               | Remote          | Trivial     | Low          |               |

Sound travels through the water as vibrations of the fluid particles in a series of pressure waves. These waves comprise a series of alternating compressions (positive pressure) and rarefactions (negative pressure). Because sound consists of variations in pressure, the unit for measuring sound is usually referenced to a unit of pressure, the Pascal (Pa). The decibel (dB) scale is used to communicate the large range of acoustic pressures encountered, with a known pressure amplitude chosen as a reference value (i.e. 0 dB). In the case of underwater sound, the reference value is taken as 1  $\mu$ Pa.

There are several descriptors used to characterise a sound wave as shown in Table 6-30 and graphically in Figure 6-5.

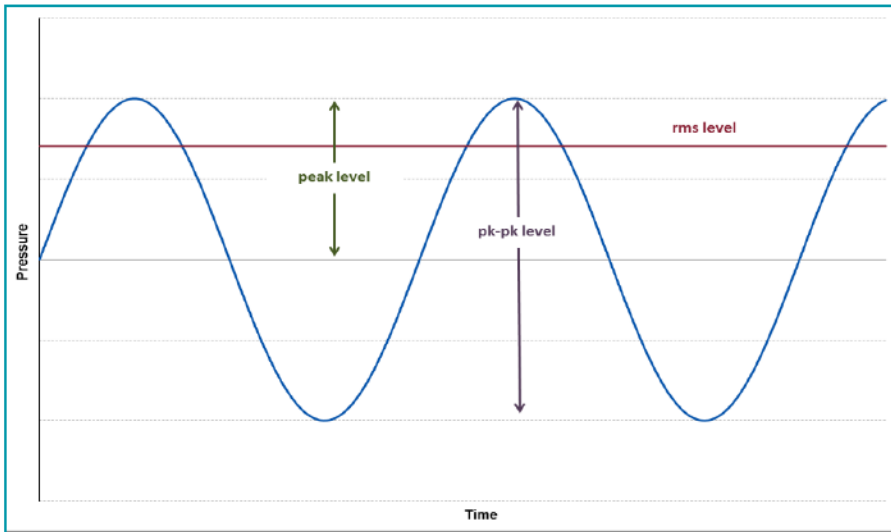


Figure 6-5: Graphical Representation of Acoustic Wave Descriptors

Table 6-30: Sound Terminology

| Term  | Definition  |
|---|---|
| Peak sound pressure level (PK)              | The peak pressure is the range in pressure between zero and the greatest pressure of the signal. It is represented by PK and the unit dB re $1\mu\text{Pa}$   |
| Peak to peak sound pressure level (PK-PK)   | The peak-to-peak pressure is the range in pressure between the most negative pressure and the most positive pressure of the signal. It is represented by PK-PK and the unit dB re $1\mu\text{Pa}$ or dB re $1\mu\text{Pa}^2\text{m}^2$ .  |
| Permanent threshold shift (PTS)             | Permanent loss of hearing sensitivity caused by excessive noise exposure.   |
| Received sound levels                       | The sound level measured at a receiver  |
| Root mean square sound pressure level (RMS) | The root mean square pressure is the square root of the average of the square of the pressure of the sound signal over a given duration. It is represented by sound pressure level (SPL) and the unit dB re $1\mu\text{Pa}$ .   |
| Sound exposure level (SEL)                  | A measure of the sound energy that considers both received level and duration of exposure. SEL is specified in terms of either single pulse (SEL) or a defined accumulation period ( $\text{SEL}_{\text{cum}}$ ). For this assessment 24hrs has been used for the accumulation period and is shown as $\text{SEL}_{24}$ . Units are dB re $1\mu\text{Pa}^2\text{-s}$ or dB re $1\mu\text{Pa}^2\text{m}^2\text{s}$ . |
| Sound source level                          | The sound pressure level or sound exposure level measured at 1 metre from a theoretical point source that radiates the same total sound power as the actual source.   |
| Temporary threshold shift (TTS)             | Temporary loss of hearing sensitivity caused by excessive noise exposure.   |

### 6.5.1 Description of Source of Impact

There are expected to be no noise impacts from the normal day to day operation of the Offshore TGP. Daily pipeline operations (i.e. continuous transport of gas) are completely internal to the pipeline, with minimal external effects during standard operating conditions.

The material of construction for the TGP and its wall thickness were selected, in part, to minimise any noise issues during pipeline operation. The omission of valves and other flow restriction points within the Offshore TGP also further reduces noise and vibration produced by the subsea pipeline, while the concrete coating provides an additional buffer from any internal pipeline noise.

There is the potential for sediment movement around the subsea pipeline to lead to an unsupported length of pipeline or “span” that could in turn result in vortex induced vibration (VIV). Evidence for such spans is one of the objectives of the ongoing Offshore TGP inspection surveys.

During operation, inspection and maintenance of the Offshore TGP, the following activities and incidents could potentially result in noise impacts.

**Table 6-31: Summary of underwater sound sources**

| Sound source  | Sound type    | Duration of noise   | Energy source level                   | Frequency range   | Reference   |
|---|---------------|---|---------------------------------------|-------------------|---|
| <b>Routine – Non-Impulsive (Continuous) Sources</b> |               |   |                                       |                   |   |
| Pipeline gas flow                                   | Non-impulsive | Continuous  | 113 dB re 1 $\mu$ Pa                  | >1 kHz            | (McCauley R. D., 2002)<br>(Kent, et al., 2016)                |
| Support Vessels – DP thrusters, onboard machinery   | Non-impulsive | Duration of inspection and maintenance survey – while operating in the OA.<br><br>Over the life of the EP this is expected to be 1 vessel for 2 activities for approximately 28 days, each. | 159 - 172 dB re 1 $\mu$ Pa            | 0.2 – 1.2 kHz     | (University of Southampton, 2015)                             |
| Uncrewed Surface Vessel (USV)                       | Non-impulsive | Duration of inspection and maintenance survey – while operating in the OA.<br><br>Over the life of the EP this is expected to be 1 vessel for 2 activities for approximately 28 days, each. | 57 dB re 1 $\mu$ Pa                   |                   | (personal communication with Xoccean, 2025)                   |
| ROV/AUV – small motor and propeller                 | Non-impulsive | Several hours   | 99 +/- 3 dB re 1 $\mu$ Pa RMS         | 0.05 – 0.5 kHz    | (Stimpert, Brijonnay, Madrigal, Wakefield, & Yoklavich, 2019) |
| <b>Non-Routine – Impulsive Sources</b>              |               |   |                                       |                   |   |
| Sub-bottom profile (SBP)                            | Impulsive     | 2 days  | 170 - 230 dB re 1 $\mu$ Pa SPL at 1 m | 2 kHz to 30 kHz   | (RPS, 2022)<br>(Woodside, 2025b)                              |
| Multi-beam echo sounder (MBES) (crewed vessel)      | Impulsive     | Several days  | 210 - 245 dB re 1 $\mu$ Pa SPL at 1 m | 12 kHz to 700 kHz | (RPS, 2022)<br>(Woodside, 2025b)                              |

| Sound source                                 | Sound type | Duration of noise | Energy source level                   | Frequency range   | Reference                                   |
|--|------------|-------------------|---------------------------------------|-------------------|---|
| Routine – Non-Impulsive (Continuous) Sources |            |                   |                                       |                   |   |
| Multi-beam echo sounder (MBES) (USV)         | Impulsive  | Several days      | <140 dB re 1 $\mu$ Pa                 | 12 kHz to 700 kHz | (personal communication with Xoclean, 2025) |
| Side scan sonar (SSS)                        | Impulsive  | Several days      | 200 - 235 dB re 1 $\mu$ Pa SPL at 1 m | 75 - 900 kHz      | (RPS, 2022) (Woodside, 2025b)               |

### 6.5.1.1 Pipeline Operations

McCauley (2002) and Kent (2016) examined the measured noise from wellheads, which included flow noise from pipelines. The broadband noise level was 113 dB re 1  $\mu$ Pa, which is comparable to ambient noise. The noise generated can be classified as a continuous, non-impulsive noise source. This coupled with the low noise levels, no significant impacts to marine fauna are expected from pipeline operations.

### 6.5.1.2 Vortex Induced Vibrations, Span Correction and Pigging

Where a span with potential to lead to VIV is located, it will be subject to further engineering analysis and if required, scheduled for correction during the next maintenance activity. The potential risk of disturbance to marine fauna from underwater noise impacts associated with VIV is considered not credible.

Maintenance works, such as the correction of unsupported subsea pipeline spans or coating repairs, do not generate significant noise levels either below or above the sea surface. The risk of underwater noise impacts on marine fauna during Offshore TGP inspection and maintenance activities is therefore considered to be very low.

Pigging operations, to assess the internal condition of the pipeline, are planned to occur only every 10 years. Any underwater noise during this activity will be transitory and temporary as the pig moves through the pipeline and the potential risk of disturbance to marine fauna is considered not credible.

### 6.5.1.3 Vessels

#### 6.5.1.3.1 Crewed Vessels

Only one vessel will operate in the OA at a time. Vessels typically travel at approximately 3 km per day in shallow coastal waters and up to 100 km per day in deeper waters, with vessels travelling between 1-6 knots (or 0.5 to 3 m/s) when conducting pipeline surveys (Hale, 2018). Based on this it is expected that surveys will remain in coastal waters of Victoria and Tasmania for one to two days each and anywhere between 5 days and 4 weeks to undertake activities in commonwealth waters, depending on the survey design.

Underwater sound that radiates from vessels is produced mainly by propeller and thruster cavitation. The typical sound levels generated by vessels are broadband and typically increase with increasing vessel size. Sound levels tend to be the highest when thrusters are used to position the vessel (DP) and when the vessel is transiting at high speeds.

Vessels will operate under the International Guidelines for The Safe Operation of Dynamically Positioned Offshore Supply Vessels (IMCA, 2022) which means that normally, vessels operate at levels less than 50% capacity. These guidelines are used to develop the Activity Specific Operating Guidelines (ASOG) for each vessel and include safe operating limits (based on relevant factors and primarily include power consumption and thruster output levels).

Crewed vessels in the 30-50 m size class, will typically be used for TGP IMR activities, have an energy source level in the range of 159 - 172 dB re 1  $\mu$ Pa (University of Southampton, 2015). Cooper Energy

commissioned noise modelling of a Dive Support Vessel (DSV) the *MV Offshore Guardian* which has an overall length of 34.0m, breadth of 11.0 and maximum draft of 2.2m, which is comparable to the size of vessel proposed for TGP's activities. The modelling found that the broadband (10 Hz to 25 kHz) sound level for the DSV while under DP was 159.8 dB re  $\mu\text{Pa}^2\text{m}^2\text{s}$  (Muellenmeister, Warren, Connell, & Koessler, 2023).

The DSV noise modelling was based on three locations – i) at the Patricia-Baleen well location in 53 m of water, ii) the nearshore pipeline in 41 m of water and iii) at the Sole well in 123 m of water (Muellenmeister, Warren, Connell, & Koessler, 2023). These three locations are approximately 120 km to the east of the TGP, in East Gippsland. As noted in Section 2, the TGP lies in water depths between 10 m at the shore crossing to approximately 80 m. The modelling undertaken for Cooper Energy is based on similar substrates and climatic conditions to that found along TGP, and in similar depths, with the exception of the shallow water found at the shore crossing of TGP. As a result the Cooper Energy underwater noise modelling is considered a suitable reference for TGP.

Estimated underwater acoustic levels are presented as sound pressure level (SPL) and accumulated sound exposure levels over 24 hours ( $\text{SEL}_{24\text{h}}$ ). Sound level contours were calculated based on the underwater sound fields predicted by the propagation models, sampled by taking the maximum value over all modelled depths above the sea floor for each location in the modelled region (Muellenmeister, Warren, Connell, & Koessler, 2023). For the DSV under DP the maximum horizontal distance to SPL isopleths to reach 120 dB re 1  $\mu\text{Pa}$  was 0.24 km in 41 m of water (Muellenmeister, Warren, Connell, & Koessler, 2023). The distance was less in deeper water.

The observational distance from a vessel the size proposed for TGP, is in the range of 1 km to 14 km (Boating World, 2024). However, to be able to clearly identify marine species such as cetaceans this observation distance is in the order of 0 km to 6 km, dependent on conditions (Esso Australia Resources Pty Ltd, 2024).

#### 6.5.1.3.2. USV

As mentioned in Section 2.2.1.3, USVs are much smaller than crewed vessels. The USV X-14, is typical of the type and size of USV that would be used in TGP activities. It is 4.5 m long and travels at a speed of 4 knots, with a range of 1512 nautical miles (Baird Maritime, 2022). USVs can conduct ROV visual inspections, multibeam imaging and potentially side scan sonar imaging. This is all controlled from a land-based controlled centre that is continuously manned. Operations are monitored in real time and can generate video and still pictures. The operational endurance varies based on the size of the vessel and power source. With fuel hybrid systems this operational range can vary from 10 to 40 days (Thomas, 2025), for the USV X-14 it is approximately 15 days. Thomas (2025) found that USVs used significantly less fuel than traditional manned vessels. From previous studies the fuel usage was 5% of a traditionally manned vessel (Thomas, 2025). Xoccean have advised that X-14 has a sound level of approximately 57 dB, which is significantly lower than the ambient ocean sounds and therefore will not contribute to ambient noise levels.

Xoccean have advised that the observational distance from the USV is between 200 m to 400 m.

#### 6.5.1.4 ROV / AUV

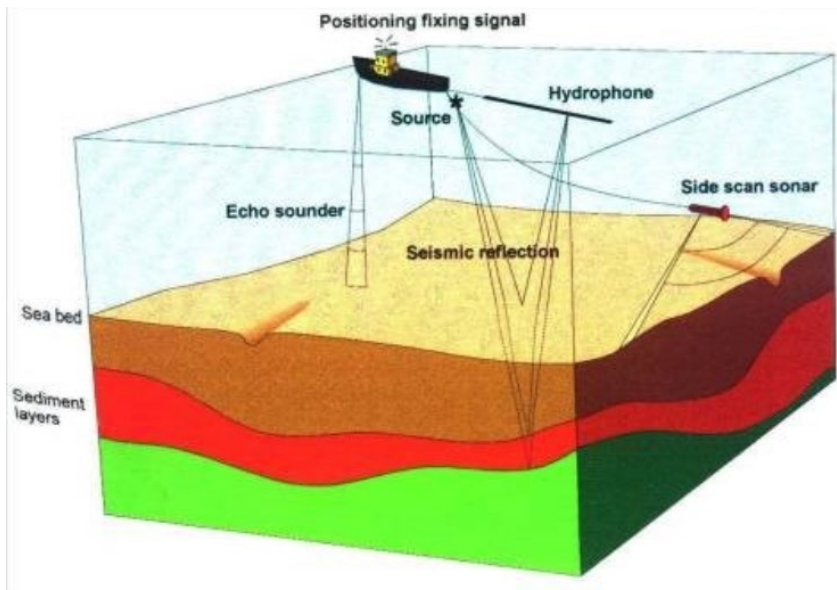
Very little information is available on the acoustic signatures of ROVs or other subsea vehicles. A study undertaken by Stimpert, et. al (2019) found sounds emanating from an AUV will have negligible impacts on marine fauna, based on sound recordings of 99 +/- 3 dB re 1  $\mu\text{Pa}$  RMS, in the 50-500 Hz range. From this it is not credible that sound generated from ROV / AUV operations in the OA would contribute to underwater sound levels to any discernible extent.

Diving activities are not expected to occur (refer to Section 2.2.1.7), but should they eventuate, they would be expected to be less than a RPV and therefore not contribute to the ambient noise levels.

#### 6.5.1.5 IMR Activities

IMR activities are non-routine, infrequent activities. The noise generated during IMR surveys is a combination of survey equipment and the vessel. Acoustic survey techniques that may be employed

by TGP (shown in Figure 6-6) include multibeam echo sounders (MBES) and side scan sonar (SSS). Sub-bottom profilers (SBP) are less likely to be employed.



**Figure 6-6: Acoustic Survey Techniques**

#### 6.5.1.5.1. SBP

Sub-bottom profiling may also occur every 5-7 years to identify features under the seabed. SBPs are small, low powered, high resolution and shallow-penetration systems, producing electrical pulses between 2 kHz and 30 kHz (Jimenez-Arranz, Glanfield, Banda, & Wyatt, 2017) with source levels between 170 and 230 dB re 1  $\mu$ Pa PK at 1 m (Woodside, 2025b) (refer to Section 2.2.1.5). SBP is typically conducted from a crewed vessel.

#### 6.5.1.5.2. MBES

MBES are low-energy, high-resolution geophysical survey instruments that may be required for IMR every 1 to 6 years to identify buckling, movement, scour and seabed features. MBES are very high frequency and high-resolution systems, producing short micro-pulses in the frequency range of 12 to 700 kHz (Jimenez-Arranz, Glanfield, Banda, & Wyatt, 2017), with peak pressure (PK) source levels between approximately 210 and 245 dB re 1  $\mu$ Pa at 1 m (Jimenez-Arranz, Glanfield, Banda, & Wyatt, 2017). The high frequency pulses of MBES are focused within multiple highly directional and narrow beams, which form a fan shape directed at the seabed, which rapidly attenuates underwater compared to lower frequency sound sources (Jimenez-Arranz, Glanfield, Banda, & Wyatt, 2017). Due to this directionality and short pulse duration, there is relatively low sound energy and very limited horizontal sound propagation. The high operating frequencies of many MBES are typically above the hearing range of the low frequency (LF) cetacean (7 Hz to 35 kHz; (Southall, et al., 2019)). The high operating frequencies of MBES are also above the hearing ranges of marine turtles (<2 kHz (Finneran, et al., 2017)) and many fish species (100 Hz to several kHz (Ladich, n.d.) (Popper A. N., et al., 2014b)). Sound sources generated closer to the seabed have a lower received noise level in the horizontal direction due to seafloor scattering and adsorption.

The MBES used on the USV has a source level less than 140 db re 1  $\mu$ Pa at 1 m (personal communication with Xocan, 2025), which is below the behavioural threshold (at 160 db re 1  $\mu$ Pa) for cetaceans from an impulsive sound source (NMFS, 2018).

#### 6.5.1.5.3. SSS

SSS produce micro-pulses of sound focussed in a swath directed at the seabed. SSS are conducted over the majority of the pipeline, excluding the inshore / coastal portions of the pipeline. SSS operating frequencies range between 75 kHz and 900 kHz (Jimenez-Arranz, Glanfield, Banda, & Wyatt, 2017). The sound produced from these instruments are of such high frequency that they

rapidly attenuate outside of the beam (Zykov & MacDonnel, 2013). Representative source levels range between 200 and 235 dB re 1  $\mu$ Pa PK at 1 m (Jimenez-Arranz, Glanfield, Banda, & Wyatt, 2017). The high operating frequencies of SSS places the dominant sound frequencies above the hearing range of most marine fauna species, including LF cetaceans, turtles and fish, although some of the lower frequency devices may be audible to HF cetaceans (MacGillvray, et al., 2014); (Zykov & MacDonnel, 2013)).

#### 6.5.1.6 Cumulative Noise Sources

The TGP pipeline has been in operation since 2002. Outside of the presence of the pipeline, itself, there are no ongoing continuous offshore operations. IMR activities are undertaken infrequently (two in five years), for short periods of time moving along the length of the pipeline (approximately 4 weeks) involving the use of one conventional vessel or USV. The level of activities proposed in this EP, is unchanged since 2011.

As noted in Section 2.1.7, the nearest operated offshore petroleum facility is located in Esso's Bass Strait fields, over 3 km to the east of the pipeline at its closest. TGP's activities may fall within Esso's noise "environment that may be affected" (EMBA), but any addition noise impacts contributed by TGP will be minimal and transient.

#### 6.5.2 Identification of Environmental Risks

Offshore TGP inspection and maintenance activities are expected to be required infrequently, with the standard length of any one voyage likely to be less than 4 weeks. While it is expected that a single IMR operation will occur during the EP life span, this EP has examined the impacts associated with two surveys during this timeframe. This equates to vessel presence and IMR activities being in the OA for 2.6% of the time and active in coastal waters for approximately 4 days per survey (for both Tasmania and Victoria) or 0.4% of the time over the life of this EP. Any activities are localised along the route of the TGP, and generally activities of long-term duration do not occur at any one location. The operating area lies in waters between 10 m and 80 m deep.

The nature and scale of impacts from noise emissions generated during this activity must be considered in the context of the ambient noise environment. Ambient underwater noise levels are dependent on location, and are often dominated by local wind noise, waves, biological noise and ship traffic. Wind speed and seabed conditions have a clear influence on the ambient noise level. Existing anthropogenic underwater noise sources in the region of the activity include shipping, and possibly small vessel traffic servicing other nearby operators. Typically, ambient underwater sound levels have been assessed as ranging between 90 to 120 dB re 1  $\mu$ Pa, in the frequency range of 50 Hz to 10 kHz (Cato & McCauley, 2002).

The response of marine fauna when exposed to introduced underwater noise is dependent on factors such as, distance from the sound source, water depth and bathymetry, the animal's hearing sensitivity, type and duration of sound exposure and the animal's activity at time of exposure.

Potential impacts to marine fauna due to underwater noise and vibration may occur, and can result in a range of responses including (Richardson, Greene, Malme, & Thomson, 1995) (Southall, et al., 2007) (NOAA, 2024):

- Injury to hearing or other organs: hearing loss may be temporary (temporary threshold shift (TTS)) or permanent (permanent threshold shift (PTS))
- Masking or interfering with other biologically important sounds (including vocal communication, echolocation, signals and sounds produced by predators or prey)
- Disturbance leading to behavioural changes or displacement of fauna. The occurrence and intensity of disturbance is highly variable and depends on a range of factors relating to the animal and situation. This includes attraction to the noise sources as well as avoidance.

EPBC Act's listed and threatened migratory species that may be present near the OA include whales breeding, migrating and foraging, white sharks and turtles. Noise is identified as a threat within the conservation advice or recovery plans (refer Table 4-2) for pygmy blue whale, southern right whale, white shark and turtle.

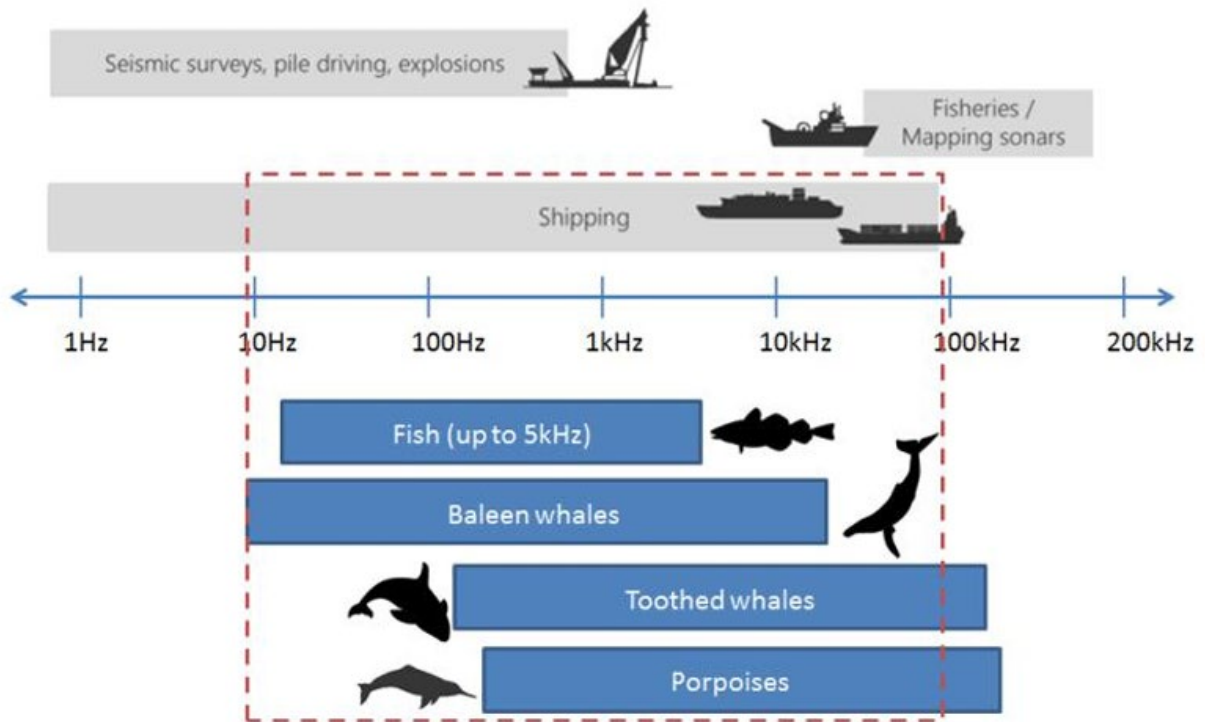
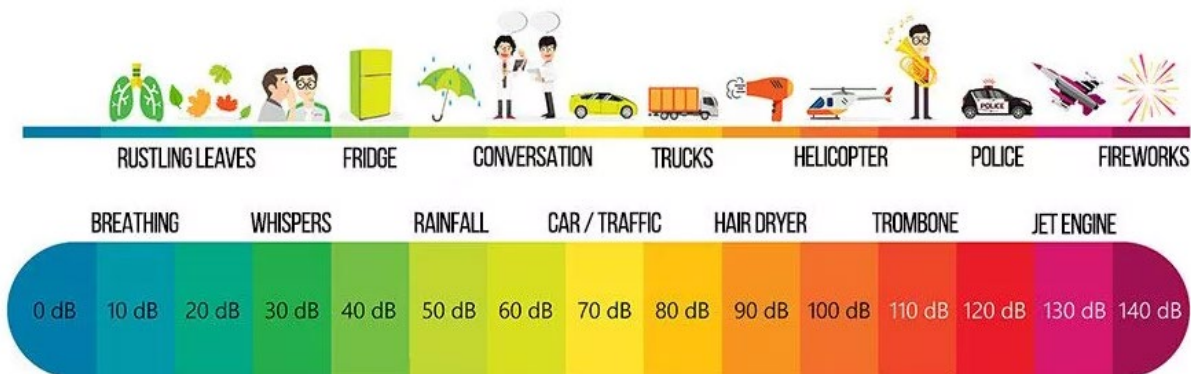


Figure 6-7: Overlap of Selected Emissions and Hearing Frequencies (Vard Marine Inc, 2023)

### 6.5.2.1 Seabirds

The majority of offshore TGP inspection and maintenance activities will be occurring in the open ocean and vessels appropriate to this environment will be contracted to perform the required work. TGP activities are located at least 7 km from the nearest onshore breeding or home habitat of threatened birds, as detailed in Section 6.2.2.2.1 and 1 km from the Victorian or Tasmanian coastline.

The IMO sets global standards, including those for noise levels in living and working areas aboard ships, as outlined in the IMO Resolution A.468(XII), “Code on Noise Levels on Board Ships”, limiting noise levels onboard to between 60 dB in sleep quarters to 110 dB in the engine room. A general rule is that the sound level reduces by 6 dB per doubling of distance, in air. At the coastal ends of the pipeline, the vessel may come as close at 1 km from shore. At this distance vessel noise is calculated to be approximately 40 dB (Noise Tools, 2025) at the shoreline. This is similar to the sound of a fridge and unlikely to be detected over the natural sounds from wind and waves.

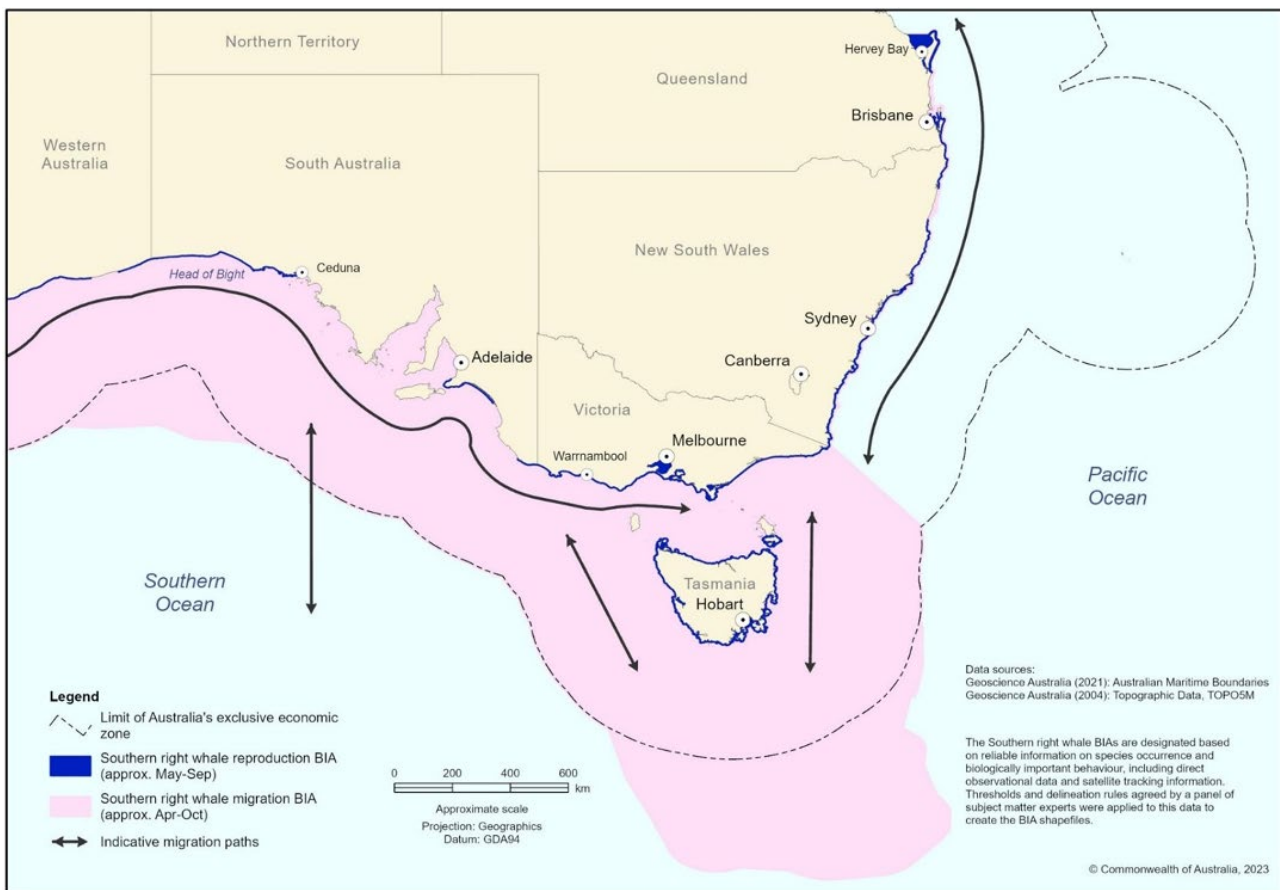


**Figure 6-8: Terrestrial Decibel Hearing Range**

Seabirds are reliant on acoustic communication for life functions such as warning others about predators, finding and assessing the quality of mates, defending territories, and discerning which youngster to feed (Erbe & Thomas, 2022). With most birds hearing between 50 Hz and 10 kHz (Erbe & Thomas, 2022), vessel noise will be discernible. Erbe and Thomas (2022) found that low frequency noise (<3 kHz) can lead to lower species diversity or lower breeding densities in an area. With TGP noise sources being present infrequently (once or twice in five year), for short durations (approximately 2 days in each coastal location) and with a received noise at the shoreline being at or close to background levels the impact to shore birds or resting and breeding seabirds is considered to cause no long-term impacts. Based on this assessment sound impacts to seabirds is assessed as having a **Consequence Level Slight**.

### 6.5.2.2 Marine Mammals

Cetaceans may travel through the area, given the southern right whale reproduction BIA (in coastal waters) and the migration BIA, and blue whale foraging BIA overlaps the operational area. The reproduction BIA for the southern right whale is also classified as habitat critical to survival (HCTS), as shown in Figure 6-9.



**Figure 6-9: Biologically Important Area and Habitat Critical to Survival for the Southern Right Whale (Source: DCCEEW, 2024)**

Marine mammals exhibit a wide range of auditory capabilities influenced by their ecological niches and underwater environment. Marine mammals are categorised into distinct hearing groups based on their auditory features, which reflect their adaptations to different environmental and functional needs (Table 6-32), being:

#### Low Frequency Cetaceans (LF)

Low frequency cetaceans (LF), such as baleen whales, are specialised for hearing sounds in the low frequency range, typically from 10Hz to 10kHz. These species use low-frequency sounds for long-

distance communication and echolocation. The auditory thresholds for baleen whales are typically lower (more sensitive) at these frequencies compared to higher-frequency cetaceans like dolphins and toothed whales.

Baleen whales, as low-frequency cetaceans, are highly sensitive to low-frequency sounds, with auditory thresholds generally in the range of 50 to 100 dB SPL for these frequencies (Simmonds & Jefferies, 2014). Baleen whales have a peak sensitivity to sounds between 20Hz and 1kHz, which is essential for long-range communication, often over hundreds or thousands of kilometres in open ocean habitats (Au & Perrin, 2008) (Clark & Ellison, 2004).

### High Frequency Cetaceans (HF)

High-frequency cetaceans (HF), such as dolphins, toothed whales (odontocetes), beaked whales, and bottlenose whales, are specialised for detecting and producing sounds at frequencies well beyond the human hearing range. These cetaceans are known for their sensitivity to high frequencies typically within the 20kHz to 150kHz range, and some species may even hear frequencies above 200kHz.

Dolphins exhibit peak sensitivity in the range of 40kHz to 100kHz, enabling them to use high-frequency sounds for precise echolocation (Tyack & Clark, 2000). Dolphins are highly sensitive to sounds in the mid-frequency range, with auditory threshold as low as 40-50 dB SPL, which aids their ability to detect prey and navigate through their environment using echolocation (Au & Perrin, 2008).

These thresholds indicate that high frequency cetaceans, particularly dolphins, toothed whales, beaked whales, and bottlenose whales, are highly sensitive to sounds in the 20kHz to 150kHz range, with auditory thresholds typically between 60dB SPL to 120 dB SPL.

### Very High Frequency Cetaceans (VHF)

There are no VHF identified within the activity area.

### Otariid Pinnipeds

Otariid pinnipeds (sea lions and fur seals) are known for their specialised auditory adaptations that allow them to hear both underwater and in air. Otariid pinnipeds, including sea lions and fur seals, generally have an auditory range from 200 Hz to 60 kHz, with a peak sensitivity around 5kHz to 15kHz, which is important for vocal communication and detection of prey sounds in the environment (Kastak & Schusterman, 1998). Their auditory thresholds typically range from 30 to 60 dB SPL at their peak sensitivity frequencies, making them highly sensitive to sounds within their optimal frequency range. They are capable of hearing both underwater and in air, with their sensitivity being generally higher in air (Schusterman, Kastak, & Southall, 2000).

### Phocid Pinnipeds

Phocid pinnipeds (true seals) are not present in the activity area.

**Table 6-32: Marine Mammal Hearing Groups and Criteria for Effects of Continuous Noise Exposure for Marine Mammals**

| Hearing Group                | Hearing frequency range (kHz) | Auditory threshold (dB SPL) | Continuous   |  |  | Impulsive  |  |  |
|------------------------------|-------------------------------|-----------------------------|--|--|--|--|--|--|
|                              |                               |                             | Behaviour (NMFS, 2018)<br>SPL (L <sub>p</sub> ; dB re 1 μPa) | PTS (NMFS, 2024)<br>Weighted SEL <sub>24hour</sub> (L <sub>E24</sub> ; dB re 1 μPa <sup>2</sup> s) | TTS (NMFS, 2024)<br>Weighted SEL <sub>24hour</sub> (L <sub>E24</sub> ; dB re 1 μPa <sup>2</sup> s) | Behaviour (NMFS, 2018)<br>SPL (L <sub>p</sub> ; dB re 1 μPa) | PTS (NMFS, 2024)<br>Weighted SEL <sub>24hour</sub> (L <sub>E24</sub> ; dB re 1 μPa <sup>2</sup> s) | TTS (NMFS, 2024)<br>Weighted SEL <sub>24hour</sub> (L <sub>E24</sub> ; dB re 1 μPa <sup>2</sup> s) |
| Low-frequency (LF) cetaceans | 0.007 – 36                    | 50 - 100                    | 120  | 197  | 177  | 160  | 183  | 168  |

| Hearing Group                 | Hearing frequency range (kHz) | Auditory threshold (dB SPL) | Continuous   |  |  | Impulsive  |  |  |
|-------------------------------|-------------------------------|-----------------------------|--|--|--|--|--|--|
|                               |                               |                             | Behaviour (NMFS, 2018)<br>SPL (L <sub>p</sub> ; dB re 1 μPa) | PTS (NMFS, 2024)<br>Weighted SEL <sub>24hour</sub> (L <sub>E24</sub> ; dB re 1 μPa <sup>2</sup> s) | TTS (NMFS, 2024)<br>Weighted SEL <sub>24hour</sub> (L <sub>E24</sub> ; dB re 1 μPa <sup>2</sup> s) | Behaviour (NMFS, 2018)<br>SPL (L <sub>p</sub> ; dB re 1 μPa) | PTS (NMFS, 2024)<br>Weighted SEL <sub>24hour</sub> (L <sub>E24</sub> ; dB re 1 μPa <sup>2</sup> s) | TTS (NMFS, 2024)<br>Weighted SEL <sub>24hour</sub> (L <sub>E24</sub> ; dB re 1 μPa <sup>2</sup> s) |
| High-frequency (HF) cetaceans | 0.15 - 160                    | 60 - 120                    |  | 201  | 181  |  | 193  | 178  |
| Otariid pinnipeds (in water)  | 0.2 - 60                      | 30 - 60                     |  | 199  | 179  |  | 159  | 144  |

The potential for impacts on marine mammals from underwater noise are most likely to occur infrequently and for a short duration, as shown in Table 6-31. The extent of impact from power sources operating in the OA is shown in Table 6-33 and Table 6-34.

**Table 6-33: Impact of Continuous Noise on Marine Mammals**

| Equipment                          | Distance from equipment for noise to reach behavioural threshold (120 dB re 1 μPa) | Comment  |   |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |    |    |    |
|------------------------------------|--|--|---|---|---|---|-----|---|---|---|-----|---|---|---|-----|---|---|---|-----|---|---|---|-----|----|----|----|
| Vessels                            | 240 m (Muellenmeister, Warren, Connell, & Koessler, 2023)                          | <p>The threshold for behavioural disturbance from continuous sound sources, such as vessels is 120 dB re 1 μPa (SPL). Acoustic modelling undertaken for Cooper Energy’s Gippsland Offshore Operation, with a Dive Support Vessel with a source level equivalent to 159.8 dB re 1 μPa<sup>2</sup>m<sup>2</sup>.s (SPL) when holding station, would exceed the 120 dB re 1 μPa threshold up to a maximum distance of 240 m (Muellenmeister, Warren, Connell, &amp; Koessler, 2023). This vessel and modelled conditions are comparable to the conditions and vessels to be used by TGP. The following table is extracted from Appendix C (Muellenmeister, Warren, Connell, &amp; Koessler, 2023), of the Cooper Energy noise modelling report.</p> <table border="1"> <thead> <tr> <th>SPL (L<sub>p</sub>; dB re 1 μPa)</th> <th>Water depth - 53m<br/>R<sub>max</sub> (m)</th> <th>Water depth - 41m<br/>R<sub>max</sub> (m)</th> <th>Water depth - 123 m<br/>R<sub>max</sub> (m)</th> </tr> </thead> <tbody> <tr> <td>170</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>160</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>150</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>140</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>130</td> <td>30</td> <td>30</td> <td>40</td> </tr> </tbody> </table> | SPL (L <sub>p</sub> ; dB re 1 μPa)          | Water depth - 53m<br>R <sub>max</sub> (m) | Water depth - 41m<br>R <sub>max</sub> (m) | Water depth - 123 m<br>R <sub>max</sub> (m) | 170 | - | - | - | 160 | - | - | - | 150 | - | - | - | 140 | - | - | - | 130 | 30 | 30 | 40 |
| SPL (L <sub>p</sub> ; dB re 1 μPa) | Water depth - 53m<br>R <sub>max</sub> (m)  | Water depth - 41m<br>R <sub>max</sub> (m)  | Water depth - 123 m<br>R <sub>max</sub> (m) |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |    |    |    |
| 170                                | -  | -  | -   |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |    |    |    |
| 160                                | -  | -  | -   |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |    |    |    |
| 150                                | -  | -  | -   |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |    |    |    |
| 140                                | -  | -  | -   |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |    |    |    |
| 130                                | 30   | 30   | 40  |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |    |    |    |

| Equipment        | Distance from equipment for noise to reach behavioural threshold (120 dB re 1 µPa)                 | Comment   |   |  |     |     |     |     |       |     |               |  |   |   |  |     |  |  |  |  |             |     |   |   |   |             |     |   |   |   |                  |     |   |   |   |     |  |  |  |  |             |     |    |    |    |             |     |   |   |   |                  |     |   |   |   |
|------------------|--|---|---|--|-----|-----|-----|-----|-------|-----|---------------|--|---|---|--|-----|--|--|--|--|-------------|-----|---|---|---|-------------|-----|---|---|---|------------------|-----|---|---|---|-----|--|--|--|--|-------------|-----|----|----|----|-------------|-----|---|---|---|------------------|-----|---|---|---|
|                  |  | <table border="1"> <tr> <td>120</td> <td>200</td> <td>240</td> <td>110</td> </tr> <tr> <td>110</td> <td>930</td> <td>1,150</td> <td>680</td> </tr> </table> <p>As noted in Table 6-31, the sound level emitted from a USV is below the ambient noise level and does not meet the injury or behavioural threshold at any distance.</p> <p>The distance from the vessel (crewed) in which the permanent and temporary threshold shifts (PTS and TTS) would be reached was predicted by Muellenmeister, <i>et al</i> (2023), as:</p> <table border="1"> <thead> <tr> <th>Hearing group</th> <th>Frequency weighted SEL<sub>24h</sub> threshold (L<sub>E,24h</sub>; dB re 1 µPa<sup>2</sup>.s)</th> <th>Water depth - 53m<br/>R<sub>max</sub> (m)</th> <th>Water depth - 41m<br/>R<sub>max</sub> (m)</th> <th>Water depth -123 m<br/>R<sub>max</sub> (m)</th> </tr> </thead> <tbody> <tr> <td colspan="5" style="text-align: center;">PTS</td> </tr> <tr> <td>LF cetacean</td> <td>199</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>HF cetacean</td> <td>198</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Otariid pinniped</td> <td>219</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td colspan="5" style="text-align: center;">TTS</td> </tr> <tr> <td>LF cetacean</td> <td>179</td> <td>30</td> <td>30</td> <td>40</td> </tr> <tr> <td>HF cetacean</td> <td>178</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Otariid pinniped</td> <td>199</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <p>A dash indicates that the level was not reached within the limits of the modelled resolution (20 m).</p> | 120                                       | 200  | 240 | 110 | 110 | 930 | 1,150 | 680 | Hearing group | Frequency weighted SEL <sub>24h</sub> threshold (L <sub>E,24h</sub> ; dB re 1 µPa <sup>2</sup> .s) | Water depth - 53m<br>R <sub>max</sub> (m) | Water depth - 41m<br>R <sub>max</sub> (m) | Water depth -123 m<br>R <sub>max</sub> (m) | PTS |  |  |  |  | LF cetacean | 199 | - | - | - | HF cetacean | 198 | - | - | - | Otariid pinniped | 219 | - | - | - | TTS |  |  |  |  | LF cetacean | 179 | 30 | 30 | 40 | HF cetacean | 178 | - | - | - | Otariid pinniped | 199 | - | - | - |
| 120              | 200  | 240   | 110                                       |  |     |     |     |     |       |     |               |  |   |   |  |     |  |  |  |  |             |     |   |   |   |             |     |   |   |   |                  |     |   |   |   |     |  |  |  |  |             |     |    |    |    |             |     |   |   |   |                  |     |   |   |   |
| 110              | 930  | 1,150   | 680                                       |  |     |     |     |     |       |     |               |  |   |   |  |     |  |  |  |  |             |     |   |   |   |             |     |   |   |   |                  |     |   |   |   |     |  |  |  |  |             |     |    |    |    |             |     |   |   |   |                  |     |   |   |   |
| Hearing group    | Frequency weighted SEL <sub>24h</sub> threshold (L <sub>E,24h</sub> ; dB re 1 µPa <sup>2</sup> .s) | Water depth - 53m<br>R <sub>max</sub> (m)   | Water depth - 41m<br>R <sub>max</sub> (m) | Water depth -123 m<br>R <sub>max</sub> (m) |     |     |     |     |       |     |               |  |   |   |  |     |  |  |  |  |             |     |   |   |   |             |     |   |   |   |                  |     |   |   |   |     |  |  |  |  |             |     |    |    |    |             |     |   |   |   |                  |     |   |   |   |
| PTS              |  |   |   |  |     |     |     |     |       |     |               |  |   |   |  |     |  |  |  |  |             |     |   |   |   |             |     |   |   |   |                  |     |   |   |   |     |  |  |  |  |             |     |    |    |    |             |     |   |   |   |                  |     |   |   |   |
| LF cetacean      | 199  | -   | -   | -  |     |     |     |     |       |     |               |  |   |   |  |     |  |  |  |  |             |     |   |   |   |             |     |   |   |   |                  |     |   |   |   |     |  |  |  |  |             |     |    |    |    |             |     |   |   |   |                  |     |   |   |   |
| HF cetacean      | 198  | -   | -   | -  |     |     |     |     |       |     |               |  |   |   |  |     |  |  |  |  |             |     |   |   |   |             |     |   |   |   |                  |     |   |   |   |     |  |  |  |  |             |     |    |    |    |             |     |   |   |   |                  |     |   |   |   |
| Otariid pinniped | 219  | -   | -   | -  |     |     |     |     |       |     |               |  |   |   |  |     |  |  |  |  |             |     |   |   |   |             |     |   |   |   |                  |     |   |   |   |     |  |  |  |  |             |     |    |    |    |             |     |   |   |   |                  |     |   |   |   |
| TTS              |  |   |   |  |     |     |     |     |       |     |               |  |   |   |  |     |  |  |  |  |             |     |   |   |   |             |     |   |   |   |                  |     |   |   |   |     |  |  |  |  |             |     |    |    |    |             |     |   |   |   |                  |     |   |   |   |
| LF cetacean      | 179  | 30  | 30  | 40   |     |     |     |     |       |     |               |  |   |   |  |     |  |  |  |  |             |     |   |   |   |             |     |   |   |   |                  |     |   |   |   |     |  |  |  |  |             |     |    |    |    |             |     |   |   |   |                  |     |   |   |   |
| HF cetacean      | 178  | -   | -   | -  |     |     |     |     |       |     |               |  |   |   |  |     |  |  |  |  |             |     |   |   |   |             |     |   |   |   |                  |     |   |   |   |     |  |  |  |  |             |     |    |    |    |             |     |   |   |   |                  |     |   |   |   |
| Otariid pinniped | 199  | -   | -   | -  |     |     |     |     |       |     |               |  |   |   |  |     |  |  |  |  |             |     |   |   |   |             |     |   |   |   |                  |     |   |   |   |     |  |  |  |  |             |     |    |    |    |             |     |   |   |   |                  |     |   |   |   |

**Table 6-34: Impact of Impulsive Noise on Marine Mammals**

| Equipment                                     | Comment  |
|---|--|
| Low energy survey instruments (MBES, SS, SBP) | Zykov (2013) conducted acoustic modelling for five low energy survey instruments off the coast of California, including MBES, SSS and sub-bottom profiler. All equipment types were modelled in the sandy bottom environment, like that of the OA. Although the bathymetry, salinity, water temperature and sub-seafloor sediment type may differ, |

| Equipment             | Comment   |               |  |             |       |             |       |                  |   |
|-----------------------|---|---------------|--|-------------|-------|-------------|-------|------------------|---|
|                       | <p>given the similarities in equipment type and seafloor habitat, the modelling is considered comparable for the nature and scale of TGPPL's IMR survey equipment.</p> <p>Potential impacts to cetaceans from MBES, SSS and sub-bottom profiler may, include behavioural disturbance if near the survey instruments, but ranges to disturbance are less than or equivalent to disturbance ranges for the crewed vessel itself (Zykov &amp; MacDonnel, 2013). PTS or TTS are not considered credible, given individuals would need to be directly next to the noise sources for prolonged duration (Zykov &amp; MacDonnel, 2013).</p> <p>Crewed vessels may operate MBES, SSS and SBP; while the USV is likely only to operate MBES. The use of a SSS with USV is still being explored.</p>  |               |  |             |       |             |       |                  |   |
| Side scan sonar (SSS) | <p>Frequency range of SSS does not overlap with LF cetaceans or otariid pinnipeds (Esso, 2025b). Dolphins and other HF cetaceans, which have a peak hearing sensitivity up to 110 kHz (NMFS, 2018), may be able to detect a small amount of the sound energy from SSS.</p> <p>Modelling by Zykov (2013) indicates that sound emissions from SSS do not exceed PTS and TTS accumulated sound exposure criteria for LF cetaceans at any distance and do not exceed criteria for HF cetaceans beyond 2 to 3 m horizontal distances from the source. This is not considered to be a credible exposure scenario for mobile marine fauna.</p> <p>Modelling results indicate that the sound emissions outside of the main beams are below the threshold levels for potential injury, PTS or TTS. Sound levels that may result in behavioural effects are likely limited to within tens of metres, but potentially up to a few hundreds of metres from the sound source for mid-frequency cetaceans (Zykov, 2013; MacGillivray et al., 2013).</p> <p>Woodside (2025) and Zykov (2013) summarise the distances to marine mammal TTS, PTS and behavioural threshold for weighted SLP as:</p> <table border="1"> <thead> <tr> <th>Hearing group</th> <th>Distance to Behavioural Threshold<br/>(Zykov &amp; MacDonnel, 2013) and (Woodside, 2025b)<br/>(Seiche, 2022)</th> </tr> </thead> <tbody> <tr> <td>LF cetacean</td> <td>110 m</td> </tr> <tr> <td>HF cetacean</td> <td>610 m</td> </tr> <tr> <td>Otariid pinniped</td> <td>-</td> </tr> </tbody> </table> | Hearing group | Distance to Behavioural Threshold<br>(Zykov & MacDonnel, 2013) and (Woodside, 2025b)<br>(Seiche, 2022) | LF cetacean | 110 m | HF cetacean | 610 m | Otariid pinniped | - |
| Hearing group         | Distance to Behavioural Threshold<br>(Zykov & MacDonnel, 2013) and (Woodside, 2025b)<br>(Seiche, 2022)  |               |  |             |       |             |       |                  |   |
| LF cetacean           | 110 m   |               |  |             |       |             |       |                  |   |
| HF cetacean           | 610 m   |               |  |             |       |             |       |                  |   |
| Otariid pinniped      | -   |               |  |             |       |             |       |                  |   |

| Equipment                      | Comment   |               |  |             |                             |             |                                |                  |   |
|--------------------------------|---|---------------|--|-------------|-----------------------------|-------------|--------------------------------|------------------|---|
| Multi-beam echo sounder (MBES) | <p>Frequency range of MBES does not overlap with LF cetaceans or otariid pinnipeds (Esso, 2025b). HF cetacean hearing frequency overlaps with the noise output of MBES. The intensity of the signal is high and would be within the audible range of HF cetaceans for distances up to 1 km (Esso, 2025b).</p> <p>Sonar based systems have very strong directivity which effectively means that there is only potential for injury when a marine mammal is directly underneath the sound source (Seiche, 2022). Once the animal moves outside of the main beam, there is no potential for injury. As with the SSS, sound emissions from MBES used on crewed vessels were found not to exceed the PTS and TTS accumulated sound exposure limit for LF cetaceans at any distance and behavioural threshold was limited to 205 m for HF cetaceans.</p> <table border="1"> <thead> <tr> <th>Hearing group</th> <th>Distance to Behavioural Threshold<br/>(Zykov &amp; MacDonnel, 2013) and (Woodside, 2025b)</th> </tr> </thead> <tbody> <tr> <td>LF cetacean</td> <td>-</td> </tr> <tr> <td>HF cetacean</td> <td>205 m</td> </tr> <tr> <td>Otariid pinniped</td> <td>-</td> </tr> </tbody> </table> | Hearing group | Distance to Behavioural Threshold<br>(Zykov & MacDonnel, 2013) and (Woodside, 2025b) | LF cetacean | -                           | HF cetacean | 205 m                          | Otariid pinniped | - |
| Hearing group                  | Distance to Behavioural Threshold<br>(Zykov & MacDonnel, 2013) and (Woodside, 2025b)  |               |  |             |                             |             |                                |                  |   |
| LF cetacean                    | -   |               |  |             |                             |             |                                |                  |   |
| HF cetacean                    | 205 m   |               |  |             |                             |             |                                |                  |   |
| Otariid pinniped               | -   |               |  |             |                             |             |                                |                  |   |
| Sub-bottom profiler (SBP)      | <p>Emits underwater noise in the frequency range that can be detected by LF and HF cetaceans and otariid pinnipeds (Woodside, 2025b). With a power output of 192 - 220 dB re 1µPa at 1 m, the intensity of the sound is high, but given the low frequency the signal would be audible at shorter distances than SSS or MBES for LF and HF cetaceans and otariid pinnipeds (Woodside, 2025b).</p> <p>The threshold for marine mammal behavioural threshold is exceeded up to 13 m horizontally from the source (McPherson C. , 2019).</p> <table border="1"> <thead> <tr> <th>Hearing group</th> <th>Distance to Behavioural Threshold</th> </tr> </thead> <tbody> <tr> <td>LF cetacean</td> <td>13 m (McPherson C. , 2019).</td> </tr> <tr> <td>HF cetacean</td> <td>50 m (Zykov &amp; MacDonnel, 2013)</td> </tr> <tr> <td>Otariid pinniped</td> <td></td> </tr> </tbody> </table>   | Hearing group | Distance to Behavioural Threshold  | LF cetacean | 13 m (McPherson C. , 2019). | HF cetacean | 50 m (Zykov & MacDonnel, 2013) | Otariid pinniped |   |
| Hearing group                  | Distance to Behavioural Threshold   |               |  |             |                             |             |                                |                  |   |
| LF cetacean                    | 13 m (McPherson C. , 2019).   |               |  |             |                             |             |                                |                  |   |
| HF cetacean                    | 50 m (Zykov & MacDonnel, 2013)  |               |  |             |                             |             |                                |                  |   |
| Otariid pinniped               |   |               |  |             |                             |             |                                |                  |   |

Physiological impacts such as physical damage to the auditory apparatus (e.g. loss of hair cells or permanently fatigued hair cell receptors), can occur in marine mammals when they are exposed to intense or moderately intense sound levels and could cause permanent or temporary loss of hearing sensitivity. From Table 6-33 and Table 6-34 the thresholds for temporary and permanent hearing loss occur within a few hundred meters of the vessel or noise source.

Behavioural responses to underwater sound are difficult to determine because animals vary widely in their response type and strength, and the same species exposed to the same sound may react differently (Nowacek, Johnson, & Tyack, 2004) (Gomez, et al., 2016) (Southall, Nowacek, Miller, & Tyack, 2016). An individual's response to a stimulus is influenced by the context in which the animal receives the stimulus and how relevant the individual perceives the stimulus to be. A number of biological and environmental factors can affect an animal's response—behavioural state (e.g. foraging, travelling, or socialising), reproductive state (e.g. female with or without calf, or single male), age (juvenile, sub-adult, adult), and motivational state (e.g. hunger, fear of predation, courtship) at the time of exposure as well as perceived proximity, motion and biological meaning of the sound and nature of the sound source.

The EPBC Act PMST reports for the OA (Appendix C) found that four species of threatened cetaceans are likely to, or known to occur within the OA:

- Blue whale (pygmy blue whale subspecies) (endangered)
- Southern right whale (endangered)
- Fin whale (vulnerable)
- Sei whale (vulnerable).

These whales are also listed as migratory and are classified as low frequency cetaceans with respect to the assessment of underwater noise impacts. There are also eleven species of listed cetaceans reported within the OA (Appendix C) being the minke, pygmy right, short-finned pilot, humpback, killer and false killer whales; and the common, risso's, dusky, Indian ocean bottlenose and bottlenose dolphins.

A description on potential underwater sound impacts to marine mammals present within the OA is presented below.

#### 6.5.2.2.1. Low Frequency Cetaceans

The fin whale is a migratory species that is listed as “species or species habitat may occur” in the Bass Strait, but not in inshore waters (DCCEEW, 2025c). While fin whales have been observed during aerial surveys in South Australia, fin whale distribution is primarily known from stranding events and whaling records. A small number of standing records for fin whales exist for Victoria and Tasmania. Sightings have been recorded of fin whales feeding in the Bonney Upwelling area, approximately 450 km to the west of the TGP OA. Given the small number of fin whales recorded in the Bass Strait and with the TGP OA being far removed from known aggregation areas, it can be surmised that the likelihood of TGP activities encountering a fin whale will be very small. The Conservation Advice - Fin Whales (Commonwealth of Australia, 2015a) has identified anthropogenic noise and acoustic disturbance as a threat with a consequence rating of minor.

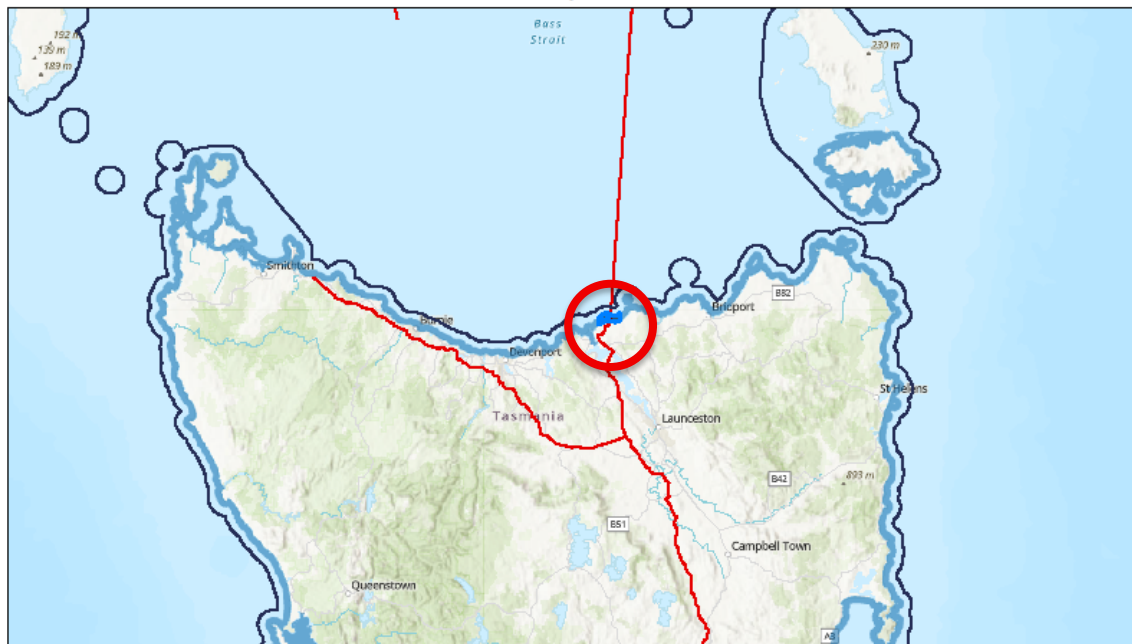
There is insufficient information on sei whale numbers, but they are known to migrate from their feeding grounds in Australian Antarctic waters to breed in tropical and subtropical waters (DCCEEW, 2025c). Sightings of sei whales feeding in the Bonney Upwelling area have been recorded, indicating this is an important feeding ground. Given the small number of sei whales recorded in the Bass Strait and with the TGP OA being far removed from known aggregation areas, it can be surmised that the likelihood of TGP activities encountering a sei whale will be very small. The Conservation Advice - Sei Whales (Commonwealth of Australia, 2015a) has identified anthropogenic noise and acoustic disturbance as a threat with a consequence rating of minor.

The PMST report for the OA (Appendix C) identified that blue whales (pygmy blue whale sub-species) are likely to be present, and southern right whales are known to be present. These two species are listed as migratory, threatened species in the EPBC Act. In addition, the following BIAs have been identified to overlap with the noise environment that may be affected (EMBA):

- Pygmy blue whale: foraging BIA
- Southern right whale: migration and reproduction BIAs.

The reproduction BIA for the southern right whale is also categorised as Habitat Critical to Survival (HCTS) of this species (DCCEEW, 2024). The area designated as reproduction BIA (and HCTS) for the southern right whale is located within coastal waters across south-southeast Australia. When compared against the OA the reproduction BIA is crossed by the pipeline for 3.3 km in Tasmanian waters and 2.8 km in Victorian waters. The total area of the TGP noise EMBA within the southern right whale reproduction BIA (and HCTS) is 4 km<sup>2</sup> in Tasmanian waters and 3.4 km<sup>2</sup> in Victorian waters. This represents a very small area of the total southern right whale reproduction BIA in Tasmania and Victoria, that encompasses the coastline of both Tasmania and Victoria (refer to Figure 6-10).

### TGP Noise EMBA in SRW Reproduction BIA - Tasmania



7/11/2025, 3:39:18 PM

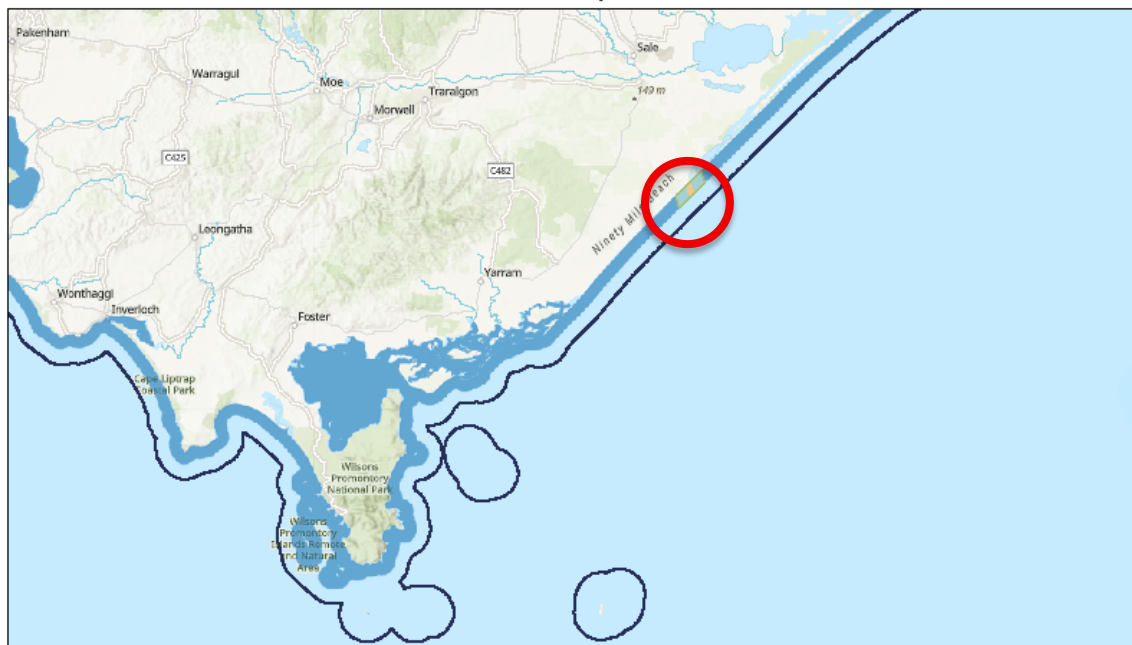
— Coastal Waters Limit    ■ Reproduction (approx May - September)  
Gas Pipelines  
— TGP pipeline    ■ TGP Noise EMBA

0 15 30 60 mi  
0 20 40 80 km  
1:2,311,162

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, USGS, Australian Government Department of Climate Change, Energy, the Environment and Water

ArcGIS Web AppBuilder  
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### TGP Noise EMBA in SRW Reproduction BIA - Victoria



7/11/2025, 3:53:51 PM

■ TGP Noise EMBA    — Coastal Waters Limit  
— TGP pipeline    ■ SRW Reproduction BIA (approx May - September)

0 5 10 20 mi  
0 12.5 25 50 km  
1:1,155,581

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, CGIA, Australian Government Department of Climate Change, Energy, the Environment and Water

ArcGIS Web AppBuilder  
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Figure 6-10: TGP Noise EMBA in the Southern Right Whale Reproduction BIA (Source: DCCEEW, 2024)

From Table 6-33, the maximum areas from a crewed vessel where noise levels are above the TTS thresholds for LF cetaceans is 24 km<sup>2</sup>. The PTS threshold was not achieved for LF cetaceans. The

affected area represent a very small portion of the total pygmy blue whale known foraging BIA (less than 0.01) and the southern right whale migration BIA (less than 0.006%). Given the small spatial overlay and the brief period of activity, if the activity has a temporal overlap with the presence and/or foraging of pygmy blue whales or migrating southern right whales, it is unlikely to result in preventing cetaceans of using this BIA. In addition, it is not credible that a cetacean will remain in the same location exposed to the noise source for a continuous period of more than 24 hours, resulting in an unlikely and inconsequential impact. The same negligible impacts apply to other marine mammals that may be migrating through or foraging in the activity area at the time of the activity.

From a horizontal distance perspective, the furthest distance at which sound generated from vessel operations exceeds thresholds for LF cetaceans where injury or disruption of behaviour could occur are 240 m (for crewed vessels) and 110 m (for SSS) for behavioural response. As described in Table 6-33 and Table 6-34, distances at which these thresholds may be triggered are based on a conservative, worst-case scenario. To manage impacts from TGP's activities on marine mammals, an observational zone of 240 m will be established for crewed vessels. USVs, as mentioned in Section 6.5.1.3.2, sound levels are below ambient sounds and as such do not reach the injury or behavioural threshold at any distance. USVs may be deployed to conduct ROV, MBES, SSS and SBP surveys. With the current maximum observational distance for marine mammals from an USV being 400 m, TGP activities will be able to observe for LF cetaceans within the noise EMBA.

A detailed assessment on potential impacts to pygmy blue whale and southern right whale is shown below.

### Pygmy Blue Whale

As pygmy blue whales are listed as endangered under the EPBC Act and the sound EMBA overlaps with a foraging BIA established for this species, it is appropriate that the principles of ESD as described in Part 3A of the EPBC Act be applied.

The time and location of the appearance of the pygmy blue whales generally coincides with the upwelling of cold water in summer and autumn along the Bonney Upwelling and the associated aggregations of krill that they feed on (Gill & Morrice, Cetacean Observations. Blue Whale Compliance Aerial Surveys, 2003). Sighting data indicates that blue whales are seasonally distributed (Gill, et al., 2011) (McCauley, Gravrilov, Jolliffe, Ward, & Gill, 2018). The peak period of potential presence of pygmy blue whales in the Bass Strait area is expected to occur towards the second quarter of the year (April -June). However, in the context of potential impacts from underwater noise emissions from vessel and acoustic survey operations, a precautionary approach has been taken in assuming that blue whales may be present, albeit in relatively low numbers, in the Bass Strait at any time of year.

The Conservation Management Plan for the Blue Whale (CMPBW) requires that “*anthropogenic noise in BIAs be managed such that any blue whale continues to utilise the area without injury and is not displaced from a foraging area*”. Guidance on Key Terms within the Blue Whale Conservation Management Plan (DAWE & NOPSEMA, 2021) defines the requirements further “*to ensure that any blue whale can continue to forage with a high degree of certainty in a Foraging Area, and that any blue whale is not displaced from a Foraging Area*”. Note that the CMPBW defines the Bass Strait, where vessel operations will take place, as a “*possible foraging area*” for pygmy blue whales.

The Guidance on Key Terms within the Blue Whale Conservation Management Plan (DAWE & NOPSEMA, 2021) suggests a whale could be displaced from a foraging area if stopped or prevented from foraging, caused to move when foraging, or stopped or prevented from entering a foraging area. A whale is considered to be displaced from a foraging area if foraging behaviour is disrupted, regardless of whether the whale can continue to forage elsewhere within that foraging area.

As noted above, TTS effects on pygmy blue whales could be encountered out to 40 m from the vessel operating on DP. There were no PTS effects on cetaceans, from vessels or acoustic survey equipment. Underwater sound impact is assessed as **Consequence Level Minor** for pygmy blue whales as there is potential for their displacement while foraging. This is considered acceptable because:

- as there is limited data available on blue whales and pygmy blue whales in the region, a precautionary approach (ALARP context B) has been adopted in considering controls to minimise and/or mitigate potential impacts from underwater noise
- if pygmy blue whales are present, they are unlikely to be present in large numbers
- if pygmy blue whales are present, they are assumed to be foraging. This area is not identified as a reproduction location for pygmy blue whales
- the CMPBW states that:
  - shipping and industrial noise are classed as a ‘minor’ consequence (defined as: individuals are affected but no effect at a population level)
  - *“It is the high intensity signals with high peak pressures received at very short range that can cause acute impacts such as injury and death.”* As vessel noise is a continuous noise source and does not have high intensity signals, it is unlikely that it would cause injury to foraging pygmy blue whales. High intensity signals produced from acoustic survey techniques will have the potential to exceed behavioural thresholds, up to a hundred metres from the sound source and will not remain in any one location for any significant period. The whole survey is expected to be completed (at worst case) within 4 weeks.
- the OA is located approximately 450 km from the Bonney coast upwelling KEF, which is a known feeding aggregation area for pygmy blue whales (Gill, et al., 2011) (McCauley, 1998). Therefore, TGP activities will not have any impact to pygmy blue whale ability to forage in that key aggregation area.

The activity will be managed in a manner that is consistent with the CMPBW, specifically Action Area A.2 - *Assessing and addressing anthropogenic noise* (Commonwealth of Australia, 2015). A detailed assessment of the requirements is outlined in Table 6-35.

**Table 6-35: Analysis of activities against the Conservation Management Plan for the Blue Whale**

| Description  | Justification  |
|--|--|
| A1 – Maintain, implement and improve efficacy of current legislative and management protection   |  |
| 1. Continue or improve existing legislative management actions   | The EP will implement the following commonwealth legislation and management arrangements (as outlined in the Conservation Management Plan for the Blue Whale): <ul style="list-style-type: none"> <li>• Part 8 Division 8.1 of the EPBC Regulations 2000 (CM1)</li> <li>• Australian National Guidelines for Whale and Dolphin Watching 2017 (CM1)</li> <li>• EPBC Act Policy Statement 2.1 (see A2.4 below)</li> </ul>  |
| A2 – Assessing and addressing anthropogenic noise  |  |
| 2. Assessing the effect of anthropogenic noise on blue whale behaviour   | Technical review of underwater noise modelling and impacts from vessels and acoustic survey methods assists with the commitments that TGPPL has in relation to this EP.  |
| 3. Anthropogenic noise in biologically important areas will be managed such that any blue whale continues to utilise the area without injury, and is not displaced from a foraging area. | The controls in place (CM43) will ensure that there are no activities if any blue whales are in the 240 m observation zone for crewed vessels or 110 m when conducting SSS activities from a USV.<br><br>It is considered with these controls in place that TGP activities will not prevent any pygmy blue whale from utilising the area without injury and is not displaced from a foraging area while surveys are conducted in the foraging BIA. The applied control |

| Description   | Justification   |
|---|---|
|   | <p>measures also serve to reduce risks of displacement, in line with DAWE guidelines (2021) which advise “Mitigation measure must be implemented to reduce the risk of displacement occurring”</p> <p>Even though there is a low probability of pygmy blue whales being present, and TGP activities occurring so infrequently, TGPPL will apply the precautionary approach and apply the following additional controls (CM52):</p> <ul style="list-style-type: none"> <li>• Trained crew to undertake continuous observation</li> <li>• Watchkeepers on the vessel or in the control room for the USV.</li> <li>• Bridge Crew/Watchkeeper is responsible for maintaining the safe navigation of the vessel including keeping compliance with COLREGs Rule 5 which requires that the vessel at all times maintains a proper look-out by sight, hearing and all available means appropriate to the prevailing circumstances and conditions, including marine mammal observations (MMO).</li> <li>• Pre-activity observations (CM3) for pygmy blue whales will occur for 30 minutes prior to starting the survey. <ul style="list-style-type: none"> <li>○ If pygmy blue whale is seen, the survey will be delayed until the whale has left the observation zone or after 30 minutes from the last observation (if the pygmy blue whale dives down)</li> </ul> </li> <li>• Night-time and low visibility procedures will be adopted (CM53).</li> </ul> |
| <p>4. EPBC Act Policy Statement 2.1 – interaction between offshore seismic exploration and whales is applied to all seismic surveys</p> | <p>The control measures align with EPBC Act Policy Statement 2.1 by:</p> <p>A2: Trained crew (CM2)</p> <ul style="list-style-type: none"> <li>• Signed induction records</li> <li>• Verification of competency certificates</li> </ul> <p>A3.1: Pre-start up visual observations (CM3)</p> <ul style="list-style-type: none"> <li>• 30 minutes prior start of works</li> </ul> <p>A3.3: Start-up delay procedure (CM3)</p> <ul style="list-style-type: none"> <li>• Delay works if pygmy blue whale is seen during the 30 minutes prior to works commencing</li> <li>• Continue to delay once pygmy blue whale has left observation zone or last seen minimum of 30 minutes within the observation zone.</li> </ul> <p>A3.4: Operations procedure (CM43)</p> <ul style="list-style-type: none"> <li>• Watchkeepers are consistently on the lookout for pygmy blue whales and other marine megafauna while operations are in progress</li> </ul> <p>A3.6: Night-time and Low Visibility Procedures (CM53) will be adopted is cetaceans are observed in the 3 hours prior to night-time or low visibility conditions occurring.</p> <p>A4: Compliance and sighting reports (CM40)</p>   |

| Description   | Justification  |
|---|--|
|   | <ul style="list-style-type: none"> <li>TGPPL will notify DCCEEW within 3 days if there is a cetacean vessel strike</li> </ul> <p>B4: Increased precaution zones and buffer zones (CM43)</p> <ul style="list-style-type: none"> <li>Defined observation zone for cetaceans (including pygmy blue whales) is continuously monitored</li> </ul> |
| <p>5. Ensuring behavioural impacts are considered when developing and updating policy documents on the management of cetaceans and anthropogenic noise.</p> | <p>The OA overlaps a minor percentage of the pygmy blue whale foraging BIA. TGPPL has committed to control measures that will ensure that impacts to pygmy blue whales will be reduced.</p>  |

### Southern Right Whales

The OA overlaps both the reproduction (and HCTS) and migration BIA for southern right whales (refer to Figure 6-9, Figure 6-10, and Section 4.3.1).

DCCEEW (2024) have noted that calving whales prefer to occupy depths of less than 10 m. The *National Recovery Plan for the Southern Right Whale* (DCCEEW, 2024) indicates presence of southern right whales in Australian waters may vary; however, the peak period of abundance is typically in late July and August. Females accompanied by a calf generally occupy the calving grounds for two to three months between June and September. This is consistent with additional description on abundance and population trends presented in the Recovery Plan, where it is stated that ‘*Based on breeding females sighted across the period 1996 to 2017 prior to the post-breeding southward migration (i.e. month of September), an estimate of population size for the eastern population resulted in 268 (146-650) whales...*’ (DCCEEW, 2024).

Southern right whales demonstrate high fidelity to feeding and breeding areas. *The National Recovery Plan for the Southern Right Whale* suggests four historic use areas based on available information. Southern right whales are consistently observed in two of these four areas, namely in the southeast of South Australia and the southwest of Victoria. In the two other high historic use areas, located off the southeast coast of Tasmania and near Eden on the border between Victoria and New South Wales, they are less consistently observed. The recovery plan also indicates that there is no current published evidence for consistent re-occupation of areas by the eastern southern right whale population other than some bays in southwest Victoria, however there are increasingly regular records of short-term use by mother - calf pairs along the Victorian, Tasmanian, and southern New South Wales coastline from May to September. In these areas, small but growing numbers of calving and non-calving whales have been observed to regularly aggregate for short periods (days to weeks). These include coastal waters between Binalong Bay to South-East Cape in Tasmania, the Gippsland coast in Victoria and in numerous protected bays generally south of the New South Wales Central Coast, potentially extending north as far as Port Macquarie (DCCEEW, 2024).

According to the *National Recovery Plan for the Southern Right Whale*, the only established calving aggregation location for southern right whales in the southeast area of Australia is Logan’s Beach, located near Warrnambool, Victoria, and that there has been expansion and re-occupation into historic breeding areas as the population has increased in abundance, with whales now utilising areas such as Geographe Bay (Western Australia), Fowlers Bay (South Australia) and Encounter Bay (South Australia) (DCCEEW, 2024).

As mentioned previously TGP activities in coastal waters are expected to occur for 0.4% of the time, or 8 days over two surveys during the life of this EP, and will occur in a very small area on the Tasmanian and Victorian coast, outside of known calving aggregation locations. At its shallowest, the pipeline is in approximately 10 m, 1 km from the shoreline (refer to Section 2.1.1). As a result a temporary overlap of the sound EMBA with the southern right whale reproduction BIA and the area adjacent to this BIA would occur if activities are undertaken between May and September.

From Table 6-33 it was noted that the distance at which PTS and TTS thresholds for marine vessel extends up to 220 m from the source. From acoustic survey equipment the PTS and TTS thresholds were not exceeded at any distance from the source (refer to Table 6-34). PTS and TTS effects from TGP activities are not considered credible due to the extended duration (24 hours) for which an individual would need to remain in proximity to the sound source.

The southern right whale is a highly mobile migratory species that travel thousands of kilometres between habitats used for essential life functions. Feeding has not been observed in coastal Australian waters, although other parts of the Australian Exclusive Economic Zone may be utilised for feeding (DCCEEW, 2024). For the eastern southern right whale population, there has been a 25% increase of foraging at higher latitudes (DCCEEW, 2024), which are closer to Antarctic waters. Southern right whales tagged at Auckland Islands off New Zealand demonstrated consistent westward migratory movements to offshore waters south of the Head of the Bight (South Australia) and Western Australia (DCCEEW, 2024).

There is the potential for migrating southern right whales, including mother-calf pairs to be present within the OA during the activity, particularly during September when it is suggested that the post-breeding southward migration may occur. As southern right whales are a highly mobile migratory species, a temporary overlap of sound EMBA from vessel operations with migrating whales is not expected to have as significant impact on the species. In addition, in light of the small percentage of area covered by the sound EMBA associated to vessel operations when compared to the total area covered by the BIAs in which migratory and reproduction behaviours take place, it is not likely whales will be restricted or deterred from accessing areas where these biologically important behaviours are known to occur (i.e. reproduction areas in shallow coastal waters). Moreover, and based on available information to date, the eastern population of southern right whales prefer aggregation areas located towards southwest Victoria, such as Logan’s beach, and other areas located within South Australia.

As a result, occasional overlap of TGP’s activities with presence of migrating whales may be possible, however it is not considered to have a significant effect on this species.

The potential impacts from underwater sound emissions generated by TGP’s activities were also assessed against the applicable recovery actions in the *National Recovery Plan for the Southern Right Whale (Eubalaena australis)* (DCCEEW, 2024) (Table 6-36).

**Table 6-36: Analysis of TGP activities against the National Recovery Plan for Southern Right Whale**

| Description  | Justification  |
|--|--|
| <b>A1 – Maintain, implement and improve efficacy of current legislative and management protection</b>  |  |
| <ul style="list-style-type: none"> <li>Maintain, implement, and improve efficacy of existing legislation and management arrangements (e.g. Managements Plans and Guidelines) as listed under Section 1.2 of the National Recovery Plan for the Southern Right Whale (DCCEEW, 2024).</li> </ul> | <p>The EP will implement the following commonwealth legislation and management arrangements (as outlined in the National Recovery Plan for Southern Right Whale):</p> <ul style="list-style-type: none"> <li>Part 8 Division 8.1 of the EPBC Regulations 2000 (CM1)</li> <li>Australian National Guidelines for Whale and Dolphin Watching 2017 (CM1)</li> <li>EPBC Act Policy Statement 2.1 (see A5.4 below)</li> </ul>           |
| <b>A2 – Address habitat degradation impacts from coastal and offshore marine infrastructure developments with the species range</b>  |  |
| <ol style="list-style-type: none"> <li>Coastal and offshore development actions are assessed according to the principles of ecological sustainable development to ensure the risk of injury, auditory impairment and/or disturbance to southern right whales is minimised.</li> </ol>          | <p>The OA and the sound EMBA overlap the southern right whale migration and reproduction BIA.</p> <p>The potential for auditory impairment during TGP’s activities is when vessels are utilising DP thrusters or operating acoustic survey equipment and a whale is located within the sound EMBA identified for PTS and TTS thresholds. However, as whales are highly mobile and are not expected to remain within the PTS or</p> |

| Description  | Justification   |
|--|---|
|  | <p>TTS areas of exposure for 24 continuous hours it is not considered likely auditory impairment will occur.</p> <p>The TGP is located outside of known or preferred aggregation areas of the southern right whale eastern populations, which are identified mostly towards the southwest of Victoria and the southeast of Southern Australia. The sound EMBA may have a temporary overlap with migrating and reproducing southern right whales, however, given the short duration of the event, high mobility of the southern right whale, and the small percentage of area the sound EMBA represents in comparison to the total BIAs it is not expected that TGP activities will prevent southern right whale migratory movements or reproductive activities within the BIAs.</p> <p>With the controls in place (CM1, CM2, CM3, CM43, CM52, CM53) will ensure that potential impacts to southern right whales will be managed and that southern right whales will not be prevented from utilising the area or cause auditory impairment in the migration and reproduction BIA.</p>  |
| <p>A5 – Asses, manage and mitigate impacts from anthropogenic underwater noise</p>   |   |
| <ul style="list-style-type: none"> <li>• Actions within and adjacent to SRW BIAs and HCTS should demonstrate that it does not prevent any SRW from utilising the area or cause auditory impairment.</li> <li>3. Actions within and adjacent to southern right BIAs and HCTS should demonstrate that the risk of behavioural disturbance is minimised.</li> </ul>       | <p>The OA and the sound EMBA overlap the southern right whale migration and reproduction BIA.</p> <p>The potential for auditory impairment during TGP's activities is when vessels are utilising DP thrusters or operating acoustic survey equipment and a whale is located within the sound EMBA identified for PTS and TTS thresholds. However, as whales are highly mobile and are not expected to remain within the PTS or TTS areas of exposure for 24 continuous hours it is not considered likely auditory impairment will occur.</p> <p>The TGP is located outside of known or preferred aggregation areas of the southern right whale eastern populations, which are identified mostly towards the southwest of Victoria and the southeast of Southern Australia. The sound EMBA may have a temporary overlap with migrating and reproducing southern right whales, however, given the short duration of the event, high mobility of the southern right whale, and the small percentage of area the sound EMBA represents in comparison to the total BIAs it is not expected that TGP activities will prevent southern right whale migratory movements or reproductive activities within the BIAs.</p> <p>With the controls in place (CM1, CM2, CM3, CM43, CM52, CM53) will ensure that potential impacts to southern right whales will be managed and that southern right whales will not be prevented from migration and reproduction BIA.</p> |
| <p>4. Ensure environmental assessments associated with underwater noise generating activities include consideration of national policy (e.g. EPBC Act Policy Statement 2.1) and guidelines related to managing anthropogenic underwater noise and implement appropriate mitigation measures to reduce risks to southern right whales to the lowest possible level.</p> | <p>The control measures align with EPBC Act Policy Statement 2.1 by:</p> <p>A2: Trained crew (CM2)</p> <ul style="list-style-type: none"> <li>• Signed induction records</li> <li>• Verification of competency certificates</li> </ul> <p>A3.1: Pre-start up visual observations (CM3)</p> <ul style="list-style-type: none"> <li>• 30 minutes prior start of works</li> </ul>  |

| Description   | Justification  |
|---|--|
|   | <p>A3.3: Start-up delay procedure (CM3 and CM43)</p> <ul style="list-style-type: none"> <li>• Delay works if southern right whale is seen during the 30 minutes prior to works commencing</li> <li>• Continue to delay once southern right whale has left observation zone or last seen minimum of 30 minutes within the observation zone.</li> </ul> <p>A3.4: Operations procedure (CM52)</p> <ul style="list-style-type: none"> <li>• Watchkeepers are consistently on the lookout for southern right whales and other marine megafauna while operations are in progress</li> </ul> <p>A4: Compliance and sighting reports (CM40)</p> <ul style="list-style-type: none"> <li>• TGPPL will notify DCCEEW within 3 days if there is a cetacean vessel strike</li> </ul> <p>B4: Increased precaution zones and buffer zones (CM43)</p> <ul style="list-style-type: none"> <li>• Defined observation zone for cetaceans (including southern right whales) is continuously monitored</li> </ul> |
| <ul style="list-style-type: none"> <li>• Quantify risks of anthropogenic underwater noise to southern right whales, including studies aimed to measure physiological effects, behavioural disturbance and changes to acoustic communication (e.g. masking of vocalisations) to whales.</li> </ul> | <p>The OA overlaps a minor percentage of the southern right whale migrating and reproduction BIAs. TGPPL has committed to control measures that will ensure that impacts to southern right whales will be reduced.</p>   |

Based on this assessment and controls in place, sound impacts to southern right whales is assessed as having a **Consequence Level Minor**.

#### 6.5.2.2.2. High Frequency Cetaceans

The PMST report for the EMBA identified several migratory species (Appendix C), several dolphin species, beaked and toothed whales, however, no BIAs or biologically important behaviours were identified within the EMBA and therefore they are not assessed further.

Table 6-34 shows that the TTS thresholds for high frequency cetaceans from SSS activities will be reached out to 610 m from the source. The TTS and PTS thresholds are not reached for any other survey equipment for high frequency cetaceans. For TTS auditory impairment to occur a high frequency cetacean would be required to remain within 610 m of the SSS for at least 24-hours. Given that high frequency cetaceans are expected to be transitory through the area, the risk of auditory impairment is not considered credible, and has not been evaluated further.

Impacts to high frequency cetaceans are predicted to be temporary avoidance of the area nearby where removal activities will be conducted. It is assessed as **Consequence Level Minor**.

#### 6.5.2.2.3. Seals

Two species of pinnipeds are potentially present in the OA, being the Australian and New Zealand fur-seals. The OA does not intersect with any pinniped BIAs or provide any critical habitat for their survival. Fur-seals have been noted to congregate around and on offshore platforms in Bass Strait. As with cetaceans, behavioural shifts could occur up to 240 m from crewed vessels. Given the nature of TGP's offshore activities, impacts to pinnipeds are considered low and not likely to be biologically significant. It is assessed as **Consequence Level Slight**.

### 6.5.2.3 Marine Reptiles

Three species of marine turtles may be present in the OA, being the loggerhead, green and leatherback turtles. However, marine turtle presence within the Offshore Operational Area is expected to be infrequent.

The Recovery Plan for Marine Turtles in Australia (2017) identifies noise interference as a threat to marine turtles and suggest the impact of noise on turtle stocks may vary depending on whether exposure is acute or chronic. The plan refers to vessel noise and the operation of some oil and gas infrastructure as sources of chronic (continuous) noise in the marine environment, exposure to which may lead to avoidance of important turtle habitat. It should be noted that no critical marine turtle habitat is present in the OA.

There is limited data on marine turtle responses to underwater noise. However, turtles have been shown to respond to low frequency sound, with indications that they have the highest hearing sensitivity in the frequency range 100–700 Hz (Bartol & Musick, 2003). Lenhardt (1994) observed marine turtles avoiding low-frequency sound.

Sound exposure thresholds and criteria for continuous sound sources (e.g. vessel noise) and impulsive sources (e.g. survey equipment) applicable to marine turtles are summarised in Table 6-37.

**Table 6-37: Criteria for Effects of Continuous and Impulsive Noise Exposure for Marine Turtles (Source: Popper et al, 2014 and NOAA, 2024)**

| Hearing Group  | Hearing frequency range | Masking                | Continuous   |  |  | Impulsive                  |  |  |
|----------------|-------------------------|------------------------|--|--|--|----------------------------|--|--|
|                |                         |                        | Behaviour  | PTS<br>Weighted SEL <sub>24hour</sub><br>(L <sub>E24</sub> ; dB re 1 μPa <sup>2</sup> s) | TTS<br>Weighted SEL <sub>24hour</sub><br>(L <sub>E24</sub> ; dB re 1 μPa <sup>2</sup> s) | Behaviour<br>(dB re 1 μPa) | PTS<br>Weighted SEL <sub>24hour</sub><br>(L <sub>E24</sub> ; dB re 1 μPa <sup>2</sup> s) | TTS<br>Weighted SEL <sub>24hour</sub><br>(L <sub>E24</sub> ; dB re 1 μPa <sup>2</sup> s) |
| Marine turtles | 0.05 – 2 kHz            | Low – at all distances | High – tens of metres<br>Intermediate – hundreds of metres<br>Low - kilometres | 220  | 200  | 166<br>175                 | 204  | 189  |

L<sub>p</sub> denotes sound pressure level and has a reference value of 1 μPa.

L<sub>E24</sub> denotes cumulative sound exposure over a 24-hour period and has a reference value of 1 μPa<sup>2</sup>s.

Based on the criteria detailed within Table 6-37, there is a low risk of injury to marine turtles from vessel noise. Behavioural changes, such as avoidance and diving, are only predicted for individuals near the vessel. Little is known about masking in marine turtles, and behavioural reactions have been found to be highly context specific, with behavioural sensitisation and habituation affecting the onset threshold for reactions and impacts (Ellison, 2012). However, given the relatively low-risk, it is unlikely that vessel noise will cause significant masking impacts in turtles.

Table 6-31 shows that except for the SBP and ROV/AUV, the frequency ranges of the survey equipment will be outside of marine turtle’s frequency range for hearing.

Underwater sound modelling undertaken for a geophysical survey (SBP, boomer, pinger, sparker, SBES and MBES) in southwest Victoria (Beach Energy, 2021) predicted that the maximum distance to the behavioural threshold for turtles was 36 m or less, and the maximum distance to the potential mortal injury threshold was 1.6 m from the sound sources. Modelling undertaken by Cooper Energy found that the behavioural, TTS and PTS thresholds was not reached from a crewed vessel on DP (Muellenmeister, Warren, Connell, & Koessler, 2023).

These results, combined with the rare occurrence of turtles and the absence of turtle BIAs, nesting beaches or habitat critical to turtle species in Bass Strait in the activity area, mean that physiological and behavioural impacts to turtles from underwater sound associated with the activity are unlikely.

#### 6.5.2.4 Fish

A number of EPBC Act listed fish occur within the OA (refer to Appendix C). In addition, the OA overlaps the white shark BIA (breeding and foraging). The Recovery Plan for the White Shark (2013) does not list noise as a threat to the species. Elasmobranchs (rays, skates, sharks) rely on low frequency sound to locate prey (Myrberg, 2001). White shark can hear sounds with frequencies ranging from 10 Hz to 800 Hz, but are more responsive to sounds less than 375 Hz (ReefQuest Centre, 2025).

Fish sensitivity and resilience to underwater noise varies greatly depending on the species, hearing capability, habits, proximity to the noise source, and the timing of the noise (i.e. during a critical part of the fish's lifecycle) (McCauley, et al., 2000). Most marine fish have relatively poor hearing, but can be particularly vulnerable to intense sound vibrations because many possess an air-filled swim bladder (Jadestone Energy, 2024).

Based on differences in fish physiology, Popper et al. (2014) developed sound exposure guidelines for fish; these are presented in Table 6-38 and are considered appropriate to assess continuous acoustic discharges to fish.

**Table 6-38: Impact thresholds to fish for continuous and impulsive noise (Source: Popper, et al., 2014)**

| Hearing Group                              | Hearing threshold (dB) | Hearing frequency range (kHz) | Continuous                           |                                     |                                     | Impulsive                             |  |  |
|--|------------------------|-------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|--|--|
|  |                        |                               | Behaviour                            | PTS                                 | TTS                                 | Behaviour                             | PTS<br>Weighted<br>SEL <sub>24hour</sub><br>(L <sub>E24</sub> ; dB re<br>1 µPa <sup>2</sup> s) | TTS<br>Weighted<br>SEL <sub>24hour</sub><br>(L <sub>E24</sub> ; dB re<br>1 µPa <sup>2</sup> s) |
| Fish: no swim bladder                      | 100                    | 0.01 – 0.8                    | (N) – Mod<br>(I) – Mod<br>(F) – Low  | (N) – Low<br>(I) – Low<br>(F) – Low | (N) – Mod<br>(I) – Low<br>(F) – Low | (N) – High<br>(I) – Mod<br>(F) – Low  | 216  | 186  |
| Fish: swim bladder not involved in hearing |                        | < 1.5                         | (N) – Mod<br>(I) – Mod<br>(F) – Low  | (N) – Low<br>(I) – Low<br>(F) – Low | (N) – Mod<br>(I) – Low<br>(F) – Low | (N) – High<br>(I) – Mod<br>(F) – Low  | 203  | 186  |
| Fish: swim bladder involved in hearing     |                        | < 1.5                         | (N) – High<br>(I) – Mod<br>(F) – Low | 170 dB rms SPL for 48 hours         | 158 dB rms SPL for 12 hours         | (N) – High<br>(I) – High<br>(F) – Mod | 203  | 186  |

Relative risk (high, moderate, low) is given for animals at three distances from the source defined in relative terms as near (N), intermediate (I) and far (F)

Popper et al. (2014), a working group of leading experts, suggested that behavioural responses in fish are more likely to occur within tens or hundreds of metres from vessels and other continuous/non-impulsive noise sources. While fish may show an initial behavioural response, fish are known to quickly habituate to continuous noise sources (Woodside Energy, 2025a). In particular, many fish species are known to aggregate around the foundations of oil and gas platforms and subsea

structures, despite operational noise. Therefore, behavioural impacts fish are expected to be limited and highly localised.

The potential for injury or TTS effects to fish resulting from single impulse source or accumulated exposures to SBP, MBES and SSS sound is limited to within 1–2 m beneath or to the side of the sound source (Zykov & MacDonnel, 2013) (McPherson & Wood, 2017). Single impulse exposures at this range are highly unlikely to occur and accumulated exposures over several hours at this range are not credible. Potential impacts to demersal and pelagic fish and sharks/rays are expected to be limited to a behavioural response. Behavioural responses are expected to be short-lived, with duration of effect less than or equal to the duration of exposure. While fish may initially be startled and move away from the sound source, once the source moves on fish would be expected to move back into the area. Potential impacts from predicted noise levels from the vessels and survey equipment are not considered to be ecologically significant at a population level.

Impacts of TGP noise emissions on commercial fishing is expected to be low, based on the above mentioned impacts on fish. Any potential impact would be confined to close to the noise source, transient in nature and short-lived.

### 6.5.2.5 Human Health

Ambient noise levels are controlled in Victoria under the *Environmental Protection Act 2017, Environmental Reference Standards*, and in Tasmania under the *Environmental Management and Pollution Control (Noise) Regulations 2016*.

The Environment Reference Standards' (ERS) environmental values for ambient sound to be achieved or maintained to protect human health and the environment have been set as:

- Sleep during the night – an ambient sound that supports sleep at night
- Domestic and recreational activities – an ambient sound environment that allows for a normal conversation indoors without the need to raise voices.
- Human tranquillity and enjoyment outdoors in natural areas – an ambient sound environment that allows for the appreciation and enjoyment of the environment for its natural condition and the restorative benefits of tranquil soundscapes in natural areas.

The Environmental Reference Standards have identified two land use categories that would be applicable to TGP being:

- Category IV – lower density or sparse populations with settlements that include smaller hamlets, villages and small towns that are generally unsuited for further expansion. Land use includes primary industry and farming.
- Category V – unique combinations of landscape, biodiversity and geodiversity. These natural areas typically provide undisturbed species habitat and enable people to see and interact with native vegetation and wildlife.

The ambient sound objectives for each land use category are shown in Table 6-39.

**Table 6-39: Indicators and Objectives for the Ambient Sound Environment (Victoria - ERS, 2021), (Tasmania EPP, 2009)**

| Land use category (Victoria) | ERS, 2021                              |            | Environment Protection Policy (Noise) 2009 |                 |
|------------------------------|--|------------|--|-----------------|
|                              | Indicators                             | Objectives | Specific Environment (Tasmania)            | Indicator level |
| Category IV                  | Outdoor $L_{Aeq-8h}$ from 10pm to 6 am | 35 dB(A)   | Outside bedrooms ( $L_{Aeq-8h}$ )          | 45 dB(A)        |
|                              | Outdoor $L_{Aeq-8h}$ from 6am to 10 pm | 40 dB(A)   | Outdoor living areas ( $L_{Aeq-16h}$ )     | 50 dB(A)        |

| Land use category (Victoria) | ERS, 2021   |   | Environment Protection Policy (Noise) 2009 |  |
|------------------------------|-------------|---|--|--|
|                              | Indicators  | Objectives  | Specific Environment (Tasmania)            | Indicator level  |
| Category V                   | Qualitative | A sound quality that is conducive to human tranquillity and enjoyment having regard to ambient natural sound scape. | Outdoor parkland and conservation areas    | Existing quiet outdoor areas should be preserved and the ratio of intruding noise to natural background sound should be kept low |

Additionally, Tasmania under the Noise Limit Guidelines (2016), has identified a noise limit for vessels of 74 dB(A) at 25 m from the source.

As discussed in Section 6.5.2.1, the vessel, at its closest, will be approximately 1 km from shore, with an estimated noise level of 40 dB at the shoreline. It can be seen that noise from the vessel will meet the noise limits/objectives under the Environment Protection Policy (Noise) and the Environmental Reference Standards, with the potential exception of night-time at residences.

TGP noise sources will only be present infrequently (once or twice in five year), for short durations (approximately 2 days in each coastal location). As the vessel is continuously moving it is not expected that the vessel would remain in any one location for 8 hours or more. With a received noise at the shoreline being at or close to background levels the impact to human health is considered to cause no long-term impacts. Based on this assessment sound impacts to human health is assessed as having a **Consequence Level Slight**.

### 6.5.3 ERA Summary

The risk assessment associated with noise management is summarised in Table 6-40.

**Table 6-40: ERA Summary**

| Activity   | Potential incident / hazard                             | Potential environmental impacts   | Residual risk |
|--|---|---|---------------|
| Offshore TGP inspection or maintenance using vessels and equipment | Vessel movements / operation                            | Noise potentially resulting in disturbance to marine fauna (including altered feeding, nursing, mating or migrating behaviour).                               | Low           |
|  | Pipeline inspection - use of acoustic survey techniques | Underwater noise potentially causing injury or resulting in disturbance to marine fauna. (including altered feeding, nursing, mating or migrating behaviour). | Low           |

### 6.5.4 Environmental Control Measures

The following controls and mitigation measures have been adopted to ensure appropriate environmental management of Offshore TGP inspection and maintenance activities to reduce the risk of noise impacts to ALARP:

- **CM1:** Marine mammal interaction management actions (A6, A2.1, A5.2)<sup>1</sup>
- **CM2:** Environmental inductions (A2.1, A5.2, A5.4)<sup>1</sup> (A2.4)<sup>2</sup>
- **CM3:** Cetacean pre-start procedure (A2.1, A5.2, A5.4)<sup>1</sup> (A2.4)<sup>2</sup>

- **CM40:** Cetacean sightings (A5.4, A6.5)<sup>1</sup> (A4.2)<sup>2</sup>
- **CM41:** End of survey cetacean report
- **CM43:** Cetaceans operations procedure (A2.1, A5.2, A5.4)<sup>1</sup> (A2.4)<sup>2</sup>
- **CM52:** Cetacean observations (A2.1, A5.4)<sup>1</sup> (A2.3, A2.4)<sup>2</sup>
- **CM53:** Cetacean night-time and low visibility procedure (A2.1, A5.2, A5.4)<sup>1</sup> (A2.4)<sup>2</sup>

Note: <sup>1</sup> National Recovery Plan for Southern Right Whale

<sup>2</sup> Conservation Management Plan for the Blue Whale

The environmental performance outcomes and environmental performance standards for the controls above are given in Appendix F.

### 6.5.5 Assessment of ALARP

Given the control measures listed above, and the infrequent nature, relatively small scale and short duration of Offshore TGP inspection and maintenance activities, the risk of disturbance or injury related to noise is considered very low and therefore ALARP.

**Table 6-41: ALARP Decision Context and Justification**

| ALARP Decision Context | Justification  |
|------------------------|--|
| B                      | <p>Impacts from underwater sound emissions are relatively well understood for marine mammals and most fish species, however there is the potential for uncertainty in relation to the level of impact. Impacts are well managed via legislative control measures. These controls are understood and well implemented by industry.</p> <p>Vessel operations are infrequent (&lt;1 every 2 years) and of short duration (generally less than 4 weeks). The area of disturbance from underwater sound emissions is known and identified as having a Slight (lowest) consequence level.</p> <p>During consultation with relevant persons, no objections or claims regarding impact on marine fauna from underwater sound emissions were made.</p> <p>TGPPL believes ALARP Decision Context B should apply.</p> |

**Table 6-42: Good Practice Controls**

| Good Practice  | Control  | Rationale   |
|--|--|---|
| EPBC Regulations, Part 8, Division 8.1<br>Australian National Guidelines for Whale and Dolphin Watching 2017 | <p><b>CM1:</b> Marine mammal interaction management actions</p> <p><b>CM2:</b> Environmental inductions</p> <p><b>CM52:</b> Cetacean observations</p>                    | <p>The Vessel Master/USV operator has responsibility for ensuring the requirements of these Regulations and Guidelines are followed.</p> <p>The Guidelines describe strategies to ensure cetaceans are not harmed during vessel operations.</p>   |
| EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales                  | <p><b>CM3:</b> Cetacean pre-start procedure</p> <p><b>CM43:</b> Cetaceans operations procedure</p> <p><b>CM53:</b> Cetaceans night-time and low visibility procedure</p> | <p>Controls will be implemented to watch for whales entering the observation zone (a radius of 240 m of the vessel on DP) prior to commencing. If whales are encountered start-up procedures will be delayed. Operational and night-time / low visibility procedures will be implemented if whales are encountered in the observation zone.</p> |

**Table 6-43: Engineering Risk Assessment**

| Additional, alternative control   | Benefit                              | Cost/feasibility  | Adopted               |
|---|--------------------------------------|---|-----------------------|
| <p>Trained crew undertake continuous observations during IMR activities</p> | <p>Allows for fauna observations</p> | <p>A.2: <i>Trained crew regarding EPBC Act Policy Statement 2.1 – Interaction between offshore seismic exploration and whales.</i></p> <p>Bridge Crew/ nominated Watchkeeper/ USV operators are trained and competent in whale observation and species identification as part of their normal requirements and ability to comply with Part 8 Division 8.1 of the Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations), which is implemented via the Australian National Guidelines for Whale and Dolphin Watching 2017 (Commonwealth of Australia, 2017). This includes:</p> <ul style="list-style-type: none"> <li>• continuous observations for cetaceans during daylight hours</li> <li>• Trained Bridge Crew/ Watchkeeper is responsible for maintaining the safe navigation of the vessel including keeping compliance with COLREGs Rule 5 which requires that the vessel at all times maintains a proper look-out by sight, hearing and all available means appropriate to the prevailing circumstances and conditions, including marine fauna observations.</li> <li>• Trained Bridge Crew/ Watchkeepers to hold Certificates of Competency recognized by the vessel Flag State which can only be obtained by completing years of sea service, including understudy time on watch on the bridge.</li> <li>• TGPPL verifies trained Bridge Crew/ Watchkeeper training and certification as part of pre-hire and routine EP compliance inspections.</li> <li>• The vessels have multiple pairs of binoculars available for Bridge Crew/ Watchkeepers</li> <li>• TGPPL verifies that Marine fauna identification charts are posted onboard vessels or in the USV control centre.</li> </ul> | <p>Adopted (CM52)</p> |

| Additional, alternative control   | Benefit  | Cost/feasibility  | Adopted           |
|---|--|---|-------------------|
| Do not undertake the activity   | Eliminates underwater sound generation   | This is not a feasible option. Failure to inspect and maintain the pipeline could potentially lead to a loss of integrity incident.   | Not adopted       |
| Conduct IMR activities outside of peak pygmy blue whale season (April to June)                              | Little benefit, given that pygmy blue whales could be present at any time of year  | IMR planning will endeavour to undertaken activity outside of the peak pygmy blue whale season. However, due to the small nature and scale of TGP activities, costs are managed through utilising available vessels.<br><br>The risk of potential impacts from routine acoustic emissions is low and limited to a behavioural response.<br><br>The impact (in the event of whales being present) will be managed through the controls in place.   | Partially adopted |
| Conduct IMR activities outside of southern right whale migration and reproduction season (April to October) | No benefit   | IMR planning will endeavour to undertaken activity outside of the peak southern right whale migration and reproduction season. However, due to the small nature and scale of TGP activities, costs are managed through utilising available vessels.<br><br>The risk of potential impacts from routine acoustic emissions is low and limited to a behavioural response.<br><br>In the event of the presence of whales in the observation zone during the activity, the proposed control measures will limit impacts. | Partially adopted |
| Use of aircraft to carry out visual observations for pygmy blue and southern right whales                   | Aerial surveys could assist in identifying whale activity over a larger monitoring zone  | Increases potential likelihood of environmental, health and safety impacts to personnel due to aircraft in the field. Unacceptable risk to personnel in operating aircraft at this distance offshore. Significant cost of aircraft and personnel.   | Not adopted       |
| Eliminate generation of noise from vessels or equipment.  | Not considered – control not feasible.   | The generation of noise from these sources cannot be eliminated due to operating requirements. Note that vessels operating on DP may be a safety critical requirement.  | Not adopted       |
| Stop DP operations if a pygmy blue or southern right whale is sighted.                                      | Ceasing Vessel DP operations will reduce the potential for TTS effects to occur if a whale stays within range of vessels for an extended period. | Grossly disproportionate. Implementation of the control requires considerable cost with minimal environmental benefit, given that PTS and TTS are not credible. Evidence suggests that the likelihood of encountering a migrating or foraging listed cetacean species   | Not adopted       |

| Additional, alternative control   | Benefit  | Cost/feasibility  | Adopted     |
|---|--|---|-------------|
|   |  | within the OA is considered low, and it is highly unlikely that cetaceans would spend sufficient time within range of vessel operations to encounter PTS or TTS. The cost/sacrifice outweigh the benefit gained.  |             |
| Passive Acoustic Monitoring (PAM)   | Not considered - control not feasible.   | PAM has limited ability to detect calls from baleen whales such as the pygmy blue whale and southern right whale, particularly with added background noise from vessel activities and known reliability and practicality limitations of the technology.<br><br>Costs associated with PAM technology acquisition and implementation.   | Not adopted |
| Use of thermal imaging equipment at night or periods of low visibility to identify cetacean presence.   | Some thermal imaging equipment if effective, can increase likelihood of identifying cetacean presence - however limitations on detection distance/depth, interpretation of data (identification of cetacean type for example) and practicality exist. The open ocean sea states and conditions (i.e., high winds and rough seas) of the OA may decrease the rate of marine mammal detection. | Costs associated with acquisition and implementation of vessel mounted camera systems are significant.<br><br>Some technology may be feasible to install on vessels such as automated vessel mounted camera systems that employ machine learning algorithms to detect cetaceans. Other technology such as hand-held thermal imaging binoculars are not feasible for use due to limitations in ability to be used open ocean sea states. | Not adopted |
| Use of Autonomous Underwater Vehicle (AUV) to monitor for presence of pygmy blue whales and southern right whales using detection of their vocalisations. | Limited benefit as the technology relies on whale vocalisation, which is currently not well understood, particularly during foraging activities. Technology and applications still under development and not widely tested in field. Application limited due to lack of real time capability.  | Costs associated with obtaining and operating the technology. Schedule delays while data is collected and interpreted (not real time monitoring).   | Not adopted |

| Additional, alternative control  | Benefit   | Cost/feasibility   | Adopted     |
|--|---|--|-------------|
| Dedicated Marine Mammal Observer (MMO), as per EPBC Policy Statement 2.1, Part B.1   | Reduces the potential for PTS, TTS and behavioural impacts for cetaceans. | <p>Two MMOs onboard the vessel, with at least one of these MMOs on shift during daylight hours, means that a trained expert is dedicated to search for whales and implement whale management procedures.</p> <p>Cost: Having two competent MMOs onboard is required to ensure each shift can be reliably completed. MMOs would be contracted through a reputable consultancy that trains and provides MMOs on a range of projects around Australia or can provide the required training to dedicated personnel. This will add a negligible amount to the daily costs of the activity, up to \$2,000 each day for both MMOs.</p> <p>Limitations: Sourcing trained and experienced MMOs to be available for each individual investigation for this activity can be logistically complex, Given the short distances to effect marine fauna, the cost and logistical considerations associated with having MMOs onboard the vessel is not supported. Given the dedicated MMOs.</p> | Not adopted |
| Undertake pre activity and activity vessel-based observations for white shark ( <i>Carcharodon carcharias</i> ) and grey nurse shark | Understanding white shark abundance and distribution.                     | <p>White sharks and grey nurse sharks do not have a swim bladder, therefore underwater sound is unlikely to impact this species.</p> <p>The Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) (DSEWPAC, 2013) and Recovery for the Grey Nurse Shark (<i>Carcharias taurus</i>) (DoE, 2014) does not list underwater sound as a threat.</p> <p>The likelihood of occurrence in the OA is low, as the activity area does not overlap with inshore reefs, where they are known to reproduce.</p> <p>Pre-activity surveys would not be required to observe white sharks and grey nurse sharks due to the low likelihood of occurrence in the activity area. Vessel-based observations will not guarantee that white sharks will be sighted. Observations can be hampered by glare, rough seas, mist/fog.</p>   | Not adopted |
| Undertake pre activity and activity vessel-based observations for turtles.   | Understanding turtle abundance and distribution                           | There are no nesting beaches within the OA or Bass Strait.   | Not adopted |

| Additional, alternative control  | Benefit  | Cost/feasibility   | Adopted            |
|--|--|--|--------------------|
|  |  | <p>The Recovery Plan for Marine Turtles in Australia (DoEE, 2017) details noise interference as a threat, however the absence of turtle BIAs in Bass Strait together with the known low abundance of turtles in Bass Strait, does not support the need to undertake pre-activity surveys for turtles.</p> <p>Vessel-based observations will not guarantee that turtles will be sighted. Observations can be hampered by glare, rough seas, mist/fog.</p>   |                    |
| <p>Undertake pre activity and activity vessel-based observations for pinnipeds</p> | <p>Understanding pinniped abundance and distribution</p> | <p>Both the Australian and New Zealand fur seals may occur within the activity area. The activity area is located a significant distance from known breeding areas of the Australian fur-seal and New Zealand fur-seal (such as Rag Island located over 40km west of the activity area, and The Skerries located over 200km northeast of the activity area).</p> <p>Sound levels from geophysical activities mostly remain under the thresholds and therefore impacts from the activity are likely to be insignificant to pinnipeds.</p> <p>Fish, being the key prey of pinnipeds, are not likely to be impacted in the long-term by the activity (see 'Impacts to fish'). As such, there are not likely to be significant consequences to the foraging habits of fur-seals. The activity will have negligible impacts on seals.</p> | <p>Not adopted</p> |
| <p>Undertake pre activity and activity vessel-based observations for dolphins</p>  | <p>Understanding dolphin abundance and distribution</p>  | <p>The PMST report for the activity area identified several dolphin species, beaked and toothed whales. However, no behaviours or BIAs were identified within Bass Strait. Underwater sound modelling undertaken for a geophysical survey in central Bass Strait (Beach Energy, 2021) predicted the following maximum distances to effects:</p> <ul style="list-style-type: none"> <li>• TTS - for LF cetaceans and HF cetaceans, the distance to effect is no greater than 10m from the sound sources</li> <li>• PTS - for LF cetaceans and HF cetaceans, the distance to effect is no greater than 2.8m from the sound sources.</li> </ul>   | <p>Not adopted</p> |

| Additional, control | alternative | Benefit | Cost/feasibility  | Adopted |
|---------------------|-------------|---------|---|---------|
|                     |             |         | <p>At these distances, it is highly unlikely there will be physiological impacts to dolphins within the activity area.</p> <p>The Australian National Guidelines for Whale and Dolphin Watching 2017 (Commonwealth of Australia, 2017) will be implemented and given the highly mobile nature of dolphins, impacts of the activity are predicted to be temporary avoidance of the immediate area during operations.</p> |         |

### 6.5.6 Demonstration of Acceptability

**Table 6-44: Demonstration of Acceptability Test**

| Factor                             | Demonstration criteria   | Rationale   |
|------------------------------------|--|---|
| Principles of ESD                  | No potential to affect biological diversity and ecological integrity.  | The potential impacts associated with this aspect are considered localised and short-term. It is not considered to have the potential to affect biological diversity or ecological integrity.   |
|                                    | Activity does not have the potential to result in serious or irreversible environmental damage.                    | The activities were evaluated as having the potential to result in a Consequence Level – Slight. This is not considered to have the potential to result in serious or irreversible environmental damage.  |
| Legislative and other requirements | Requirements of Part 8, Division 8.1 of EPBC Regulations, and the EPBC Act Policy Statement 2.1 have been adopted. | <p>A2: Trained crew (CM2)</p> <ul style="list-style-type: none"> <li>Signed induction records</li> <li>Verification of competency certificates</li> </ul> <p>A3.1: Pre-start-up visual observations (CM3)</p> <ul style="list-style-type: none"> <li>30 minutes prior start of works</li> </ul> <p>A3.3 Start-up delay procedure (CM43)</p> <ul style="list-style-type: none"> <li>Delay works if pygmy blue whale or southern right whale is seen during the 30 minutes prior works to commence</li> <li>Continue to delay once pygmy blue whale or southern right whale has left observation zone or last seen minimum 30 minutes within the observation zone</li> </ul> <p>A3.4: Operations procedure (CM52)</p> <ul style="list-style-type: none"> <li>Watchkeepers are on the lookout for pygmy blue whale or southern right whale and other marine fauna while operations are in progress</li> </ul> <p>A4: Compliance and Sighting reports (CM40)</p> <ul style="list-style-type: none"> <li>TGPPL's responsibility to notify Commonwealth (DCCEE within 3 days) or State (NRE / DEECA as soon as possible) if there is a cetacean sighting or injury (Table 8-3)</li> </ul> |

| Factor           | Demonstration criteria  | Rationale   |
|------------------|---|---|
|                  | <p>Conservation Management Plan for Blue Whale 2015 intent has been met</p> <p>National Recovery Plan for the Southern Right Whale, 2024</p>    | <p><i>A1 - Maintain, implement, and improve efficacy of current legislative and management protection</i></p> <p>The EP will implement the following commonwealth legislation and management arrangements:</p> <ul style="list-style-type: none"> <li>Part 8 Division 8.1 of the Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) (CM1)</li> <li>Australian National Guidelines for Whale and Dolphin Watching 2017 (CM1)</li> <li>EPBC Act Policy Statement 2.1</li> </ul> <p><i>A2 - Assessing and addressing anthropogenic noise</i></p> <p>The controls in place (CM3, CM43 and CM53) will ensure that activities are modified if any blue or southern right whales are within 240 m of the vessel under DP or undertaking SSS surveys.</p> <p>It is considered with these controls in place that the activities will not prevent any pygmy blue whale or southern right whale from utilising the area or cause auditory impairment while surveys are conducted in the foraging BIA (pygmy blue whale) or migrating BIA (southern right whale). Even though there is a very low probability of pygmy blue whale or southern right whale being present, TGPPL will apply the precautionary approach and apply the following additional controls:</p> <ul style="list-style-type: none"> <li>Trained crew to undertake observation</li> <li>Bridge Crew/ Watchkeepers on the marine survey vessel</li> <li>Pre-activity observations for pygmy blue whale and southern right whale will occur for 30 minutes prior to starting the survey.</li> <li>If pygmy blue whale and/or southern right whale is seen, the survey will be delayed until the whale has left the observation zone or after 30 minutes from last observation (if whale dives down)</li> <li>Adaptive management will be undertaken if a pygmy blue whale and/or southern right whale is observed.</li> </ul> |
|                  | <p>Environment Reference Standard 2021 (Victoria)</p> <p>Environmental Management and Pollution Control (Noise) Regulations 2016 (Tasmania)</p> | <p>The potential impacts associated with this aspect are considered localised and short-term. They are expected to meet the ambient sound objectives to protect human health and the environment.</p>   |
| Internal context | <p>Consistent with TGP Environment Policy Statement.</p>  | <p>Proposed activities are consistent with the TGP Environment Policy Statement, in particular “comply with all relevant legislation, regulations, codes of practice and standards” and “conducting all activities in a manner consistent with the principles of sustainable management and caring for the environment”.</p>  |
| External context | <p>Relevant person concerns have been considered/addressed</p>  | <p>No specific relevant person concerns have been raised concerning underwater noise emissions.</p>   |

| Factor                | Demonstration criteria            | Rationale |
|-----------------------|-----------------------------------|-----------|
|                       | through the consultation process. |           |
| Acceptability outcome | <b>Acceptable</b>                 |           |

## 6.6 Routine Atmospheric and Greenhouse Gas Emissions

**Table 6-45: Impact/Risk Evaluation Summary**

| Source of Impact/Risk   | Environmental Value Potentially Impacted |               |             |                     |         |                | Evaluation    |                 |             |              |               |
|---|--|---------------|-------------|---------------------|---------|----------------|---------------|-----------------|-------------|--------------|---------------|
|   | Seabed Sediment                          | Water Quality | Air Quality | Ecosystem / Habitat | Species | Socio-economic | Decision Type | Likelihood      | Consequence | Risk Ranking | Acceptability |
| Exhaust emissions from internal combustion engines on vessels |  |               | ✓           |                     |         |                | A             | Highly Unlikely | Slight      | Low          | Acceptable    |

### 6.6.1 Impact of Activities

#### 6.6.1.1 Atmospheric Pollutants

There has been no air quality monitoring by TGPPL (or the previous operators or owners of the TGP) in Bass Strait, although air quality has been monitored since 1976 by the Cape Grim Baseline Air Pollution Station in north-west Tasmania. Ambient air quality in the Bass Strait region is subject to occasional air pollutants from major urban and industrial areas of South Australia, Victoria and Tasmania due to wind patterns across Bass Strait. However, air quality is dominated by the transportation of unpolluted air by the Roaring Forties across the Southern Ocean.

There will be no impacts from emissions to the atmosphere during the normal day to day operation of the Offshore TGP. Daily operations (i.e. continuous transport of gas) are completely internal to the pipeline with no offshore activities or external effects during standard operating conditions.

Environmental impacts related to air emissions will only potentially occur in the event of a rupture of the Offshore TGP (emergency / unplanned event) or during subsea pipeline inspection and maintenance activities. The key activity likely to generate air emissions is the operation of offshore support vessels and associated machinery. Activities and incidents associated with the Offshore TGP that could potentially result in air emissions include:

- Subsea pipeline rupture (refer to Section 6.11); and
- Vessel operations (engine exhaust emissions)

#### 6.6.1.2 Greenhouse Gas Emissions

Greenhouse (GHG) emissions are generated during the combustion / venting of hydrocarbons, specifically Marine Diesel Oil (MDO) used to power engines and generators on the vessel and in equipment (such as ROVs and cranes).

As per the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (World Resources Institute and World Business Council for Sustainable Development) 2004; GHG emissions are classified as:

- Scope 1 – emissions that a company makes directly
- Scope 2 – emissions that a company makes indirectly through the purchase of electricity (Not applicable to TGP)
- Scope 3 – emissions not associated with the company, but that the company is indirectly responsible for. For example, from buying products from its suppliers and emissions associated with making the products; or from a customer's use of the company's products.

For this EP, the following applies:

- Scope 1 – emissions associated with vessel operations, i.e. combustion of MDO from the vessel engines, generators and equipment used.
- Scope 2 – is not relevant to TGP as no electricity is purchased.
- Scope 3 – emissions associated with ongoing management of the pipeline.

The sources of GHG emissions are defined in Table 6-46.

**Table 6-46: Sources of GHG Emissions**

| Emissions Type | Source   | Annual Emissions (tCO <sub>2</sub> -e) | Emissions over life of EP (5 years) (tCO <sub>2</sub> -e) |
|----------------|--|--|---|
| Scope 1        | Inspection/maintenance activities (based on 1 survey every two years for 20 days), using 1 m <sup>3</sup> of fuel/day.   | 27                                     | 135   |
| Scope 3        | Management/consultant support on ongoing management of the pipeline includes travel by PIMS staff, IT related items, professional services, consultants, accounting, legal | 150                                    | 750   |
| Total          |  | 177                                    | 885   |

Australia generated a total of 467 MtCO<sub>2</sub>-e in 2023 (CER, 2023). The latest GHG emissions data for the Victoria and Tasmania was from 2021, with Victoria contributing 80.1 MtCO<sub>2</sub>-e (DEECA, 2023) and Tasmania -4.8 MtCO<sub>2</sub>-e (CCO, 2023). Together Victoria and Tasmania represented 16.2% of Australia's GHG emissions (DEECA, 2023). GHG emissions from TGP are negligible in comparison (less than 0.0003%). Consequently, no further evaluation has been undertaken.

## 6.6.2 Identification of Environmental Risks

The key potential environmental impacts from air emissions during Offshore TGP inspection and maintenance activities are:

### 6.6.2.1 Increased levels of atmospheric pollution (nitrogen oxides (NO<sub>x</sub>), sulphur oxides (SO<sub>x</sub>) and particulates) and greenhouse gases, leading to localised reduction in air quality;

Offshore TGP inspection and maintenance activities are expected to be required less than once every 2 years on average, with the standard length of any one voyage likely to be less than 4 weeks. Any activities are localised along the route of the TGP, and generally activities of long-term duration do not occur at any one location.

The engines of inspection and maintenance vessels generate air emissions of NO<sub>x</sub>, SO<sub>x</sub> and particulates. The volume and duration of these emissions is not expected to be significant as such emissions will occur intermittently and over dispersed locations.

MARPOL Annex VI, first adopted in 1997, limits the main air pollutants contained in ships' exhaust gas, including SO<sub>x</sub> and NO<sub>x</sub>, and prohibits deliberate emissions of ozone depleting substances. MARPOL Annex VI also regulates shipboard incineration, and the emissions of volatile organic compounds (VOCs) from tankers. Regulation 18 of Annex VI also regulates suppliers of marine fuel oil to control the quality of fuel used by vessels (particularly the sulphur content), hence reducing vessel exhaust emissions (particularly SO<sub>x</sub>).

Due to the small size of vessels used, the infrequent nature and short duration of activities, and compliance with MARPOL requirements, exhaust emissions from Offshore TGP inspection and maintenance vessels are expected to be insignificant in the overall context of shipping traffic in Bass

Strait. Vessel exhaust emissions are therefore not expected to have any noticeable impacts on local air quality or visual amenity.

### 6.6.2.2 Reduced visual amenity (e.g. black smoke and particulates)

If not properly serviced and maintained, exhaust emissions from vessels could potentially generate black smoke. There is no other credible source of smoke or particulates from the TGP activities described.

### 6.6.3 ERA Summary

The risk assessment related to air emissions is summarised in Table 6-47.

**Table 6-47: ERA Summary**

| Activity  | Potential Incident / hazard                  | Potential environmental impacts  | Residual risk |
|---|--|--|---------------|
| Offshore TGP inspection and maintenance using vessels | Vessel operations - engine exhaust emissions | Increased levels of atmospheric pollution (NO <sub>x</sub> , SO <sub>x</sub> and particulates) and greenhouse gases, leading to localised reduction in air quality.<br>Reduced visual amenity (e.g. black smoke and particulates). | Low           |

### 6.6.4 Environmental Control Measures

The following controls and mitigation measures have been adopted to ensure appropriate environmental management of Offshore TGP inspection and maintenance activities to reduce the environmental risks associated with air emissions to ALARP:

- **CM14:** Compliance with MARPOL Annex VI – air pollution

The environmental performance outcomes and environmental performance standards for the controls above are given in Appendix F.

### 6.6.5 Assessment of ALARP

Given the control measures listed above, and the infrequent nature, relatively small scale and short duration of Offshore TGP inspection and maintenance activities, the risk of disturbance or injury related to noise is considered very low and therefore ALARP.

**Table 6-48: ALARP Decision Context and Justification**

| ALARP Decision Context | Justification  |
|------------------------|--|
| A                      | <p>Air emissions from fuel combustion on vessels is a common occurrence both nationally and internationally. Managing the impacts is well understood with good practice controls that are implemented by the industry.</p> <p>From Table 6-46, it can be seen under a worst-case scenario of one survey every two years (as opposed to the planned frequency of one survey every 5 years), GHG emissions are negligible.</p> <p>Vessel operations are infrequent (&lt;1 every 2 years) and of short duration (generally less than 4 weeks). Air emissions from these activities will dissipate rapidly and the consequences of any impact is assessed as Consequence Level - Slight</p> <p>During consultation with relevant persons, no objections or claims regarding air emissions or GHG emissions were made.</p> <p>TGPPL believes ALARP Decision Context A should apply.</p> |

**Table 6-49: Good Practice Controls**

| Good Practice  | Control  | Rationale   |
|--|--|---|
| MARPOL Annex VI Regulations for the Prevention of Air Pollution from Ships | <b>CM14:</b> Compliance with MARPOL Annex VI – air pollution | MARPOL Annex VI specifically requires vessels (as appropriate to class) hold an International Air Pollution Prevention certificate for each diesel engine of >130 kW; vessel engine NOx emission levels comply with Regulation 13; sulphur content of any fuel oil used on board is <0.5%; and the ongoing maintenance of engines, generators and deck equipment to ensure efficient operation. |

**Table 6-50: Engineering Risk Assessment**

| Additional, alternative control                        | Benefit  | Cost/feasibility   | Adopted      |
|--|--|--|--------------|
| Eliminate air emission producing equipment             | Not considered – control not feasible.                       | Atmospheric emissions vessels are required to undertake the Activity. Equipment cannot be removed completely.<br><br>Some USVs are solar powered, where they are available and technically suitable for IMR activities they will be preferred over conventional vessels.   | Not adopted  |
| Using anchors when on location instead of employing DP | Reduces air emissions by eliminating increased thruster use. | Not employing DP when on location for short periods of time will only reduce GHG and atmospheric emissions marginally. TGP have committed to using DP where possible to minimise impacts to the seabed and other marine users. Therefore, the minimal decrease in emissions does not outweigh protections to the seabed. | Not adopted  |
| No incineration of vessel wastes                       | Eliminates air pollutants from incineration.                 | Costs associated with transporting waste to shore for landfill outweighs onboard incineration. There are health implications for storage of waste onboard, and implications for deck space.  | Not adopted. |

## 6.6.6 Demonstration of Acceptability

**Table 6-51: Demonstration of Acceptability Test**

| Factor                             | Demonstration criteria  | Rationale   |
|------------------------------------|---|---|
| Principles of ESD                  | No potential to affect biological diversity and ecological integrity.                           | The potential impacts associated with this aspect are considered localised and short-term. It is not considered to have the potential to affect biological diversity or ecological integrity.   |
|                                    | Activity does not have the potential to result in serious or irreversible environmental damage. | The activities were evaluated as having the potential to result in a Consequence Level – Slight. This is not considered to have the potential to result in serious or irreversible environmental damage.  |
| Legislative and other requirements | Legislative and other requirements have been identified and met.                                | <p>The requirements of MARPOL Annex VI have been adopted.</p> <p>The following legislative requirements are considered relevant as they apply to the implementation of MARPOL.</p> <ul style="list-style-type: none"> <li>• Protection of the Sea (Prevention of Pollution from Ships) Act 1983</li> <li>• Navigation Act 2012 – Chapter 4 (Prevention of Pollution)</li> <li>• Marine Order 97 (Marine Pollution Prevention – Air Pollution) 2013</li> </ul> <p>Adoption of control measures listed in Section 6.6.4 ensure TGP is meeting the ambient air indicators and objectives outlined in the Environment Reference Standard 2021.</p> <p>The ALARP assessment undertaken in Section 6.6.5 aligns with the control options identified in the EPA Publication 2048: Guidelines for minimising greenhouse gas emissions (EPA Victoria, 2022).</p> |
| Internal context                   | Consistent with TGP Environment Policy Statement.   | Proposed activities are consistent with the TGP Environment Policy Statement, in particular “comply with all relevant legislation, regulations, codes of practice and standards” and “conducting all activities in a manner consistent with the principles of sustainable management and caring for the environment”.   |
| External context                   | Relevant person concerns have been considered/addressed through the consultation process.       | No specific relevant person concerns have been raised concerning air emissions.   |
| Acceptability outcome              | <b>Acceptable</b>   |   |

## 6.7 Planned and Unplanned Discharges: Waste

**Table 6-52: Impact/Risk Evaluation Summary**

| Source of Impact/Risk   | Environmental Value Potentially Impacted |               |             |                     |         |                | Evaluation    |                 |             |              |               |
|---|--|---------------|-------------|---------------------|---------|----------------|---------------|-----------------|-------------|--------------|---------------|
|   | Seabed Sediment                          | Water Quality | Air Quality | Ecosystem / Habitat | Species | Socio-economic | Decision Type | Likelihood      | Consequence | Risk Ranking | Acceptability |
| Accidental loss of hazardous or non-hazardous solid wastes to the marine environment                          | ✓  | ✓             |             | ✓                   | ✓       |                | A             | Highly Unlikely | Minor       | Low          | Acceptable    |
| Discharge of sewage, grey water and putrescible waste from vessels (including ASV) to the marine environment. |  | ✓             |             |                     |         |                |               | Highly Unlikely | Slight      | Low          |               |
| Discharge of deck, bilge and drain water from vessels (including the ASV) to the marine environment.          |  | ✓             |             |                     |         |                |               | Highly Unlikely | Slight      | Low          |               |
| Discharge of brine and cooling water from vessels (including the ASV) to the marine environment.              |  | ✓             |             |                     |         |                |               | Highly Unlikely | Slight      | Low          |               |

### 6.7.1 Impact of Activities

There will be no wastes generated during the normal day to day operation of the Offshore TGP. Daily operations (i.e. continuous transport of gas) are completely internal to the pipeline with no offshore activities or external effects during standard operating conditions.

Inspection and maintenance activities related to the Offshore TGP also produce minimal waste. However, the following activities and incidents associated with the Offshore TGP could potentially generate waste(s):

- Pipeline maintenance activities (e.g. span correction, removal of dropped objects and replacement of sacrificial anodes)
- Pipeline inspection activities (e.g. pigging, ROV / AUV or SSS)
- Vessel operations (e.g. sewage/grey water generation, food preparation, domestic waste generation, hazardous waste management/spill clean-up, deck drainage and bilge water management)

Wastes generated by pigging operations will be received and managed at TGP onshore facilities and will, therefore, not be considered further in this Offshore EP. Where required, wastes associated with Offshore TGP maintenance activities (e.g. waste grout and bags, old sacrificial anodes and dropped objects collected from the seabed) will be stored on the vessel and returned to shore for appropriate waste management. Such wastes are not expected to have any adverse impacts on the marine environment. Offshore TGP waste management procedures shall be based on the following principles, listed in order of priority:

- Avoid wastes
- Reduce wastes at the source
- Reuse materials where possible
  - Recycle wastes where practicable
- Dispose of wastes appropriately and responsibly

Inspection and maintenance vessels could potentially release wastes to the marine environment, either through planned discharge (e.g. sewage / grey water and food scraps) or through inappropriate waste management practices (e.g. loss of containment or dumping of domestic wastes and hazardous wastes).

### 6.7.2 Identification of Environmental Risks

Potential environmental impacts related to waste management will only occur during Offshore TGP inspection and maintenance activities using vessels. The key potential environmental impacts related to inappropriate vessel waste management practices are:

#### 6.7.2.1 Very minor, localised, short-term contamination of the marine environment through uncontrolled or inappropriate disposal of liquid wastes (e.g. sewage, grey water, deck drainage, bilge water and hazardous/chemical wastes), no impact on marine ecosystems or marine fauna expected

Offshore TGP inspection and maintenance activities are expected to be required less than once every 2 years on average, with the standard length of any one voyage likely to be less than 4 weeks. Any activities are localised along the route of the TGP, and generally activities of long-term duration do not occur at any one location.

#### 6.7.2.2 Injury to, or death of, marine fauna through entanglement in, or ingestion of, plastic and other solid wastes

The majority of Offshore TGP inspection and maintenance activities will be occurring in open ocean and no marine fauna populations are known to inhabit the immediate area of the Offshore TGP outside the coastal zone. Activities during Offshore TGP inspection and maintenance will be confined to areas located at least 8 km from the nearest onshore breeding or home habitat. Should an accidental discharge of waste occur, the risk of adverse environmental impact is considered extremely low given the small volume of wastes generated and stored, and rapid dispersion in the high energy, open ocean environment.

#### 6.7.2.3 Visible pollution / reduction of visual amenity

Works in near coastal environments at either end of the Offshore TGP are generally undertaken using smaller vessels than those used for open ocean work. Such operations are generally diver-based operations and of smaller scale than the major open ocean surveys. Therefore, the volume of wastes generated during nearshore inspection and maintenance works and, hence the environmental risk, will be lower than during open ocean activities.

### 6.7.3 ERA Summary

The risk assessment associated with waste management is summarised in Table 6-53.

**Table 6-53: ERA Summary**

| Activity   | Potential incident / hazard  | Potential environmental impacts   | Residual risk |
|--|--|---|---------------|
| Offshore TGP inspection or maintenance using vessels | Uncontrolled or inappropriate disposal of liquid wastes (e.g. sewage / grey water, deck drainage / bilge water and hazardous / chemical wastes from the vessel). | Very minor, localised, short-term contamination of the marine environment, no impact on marine ecosystems or marine fauna expected.<br>Very minor, localised, short-term visible pollution / reduction of visual amenity. | Low           |
|  | Uncontrolled or inappropriate disposal of solid wastes (e.g. plastic) from the vessel.   | Injury to, or death of, marine fauna through entanglement in, or ingestion of, plastic and other solid wastes.<br>Very minor, localised visible pollution / reduction of visual amenity.                                  | Low           |

#### 6.7.4 Environmental Control Measures

The following controls and mitigation measures have been adopted to ensure appropriate environmental management of Offshore TGP inspection and maintenance activities to reduce the risk of impacts from waste to ALARP:

- **CM10:** Procedure to recover dropped objects
- **CM15:** Compliance with MARPOL Annex IV – sewage treatment plant
- **CM16:** Planned Maintenance System (PMS) – sewage treatment plant (STP)
- **CM17:** Discharge criteria for food waste
- **CM18:** Compliance with MARPOL Annex V – prevention of pollution from garbage
- **CM19:** Planned Maintenance System (PMS) – food macerator
- **CM20:** Compliance with MARPOL Annex I – prevention of pollutions from oil
- **CM21:** Discharge criteria of oily water separator
- **CM22:** Waste handling and storage procedures

The environmental performance outcomes and environmental performance standards for the controls above are given in Appendix F.

#### 6.7.5 Assessment of ALARP

Given the control measures listed above, and the infrequent nature, relatively small scale and short duration of Offshore TGP inspection and maintenance activities, the risk of adverse environmental impacts associated with inappropriate management of waste streams is considered extremely low and therefore ALARP.

**Table 6-54: ALARP Decision Context and Justification**

| ALARP Decision Context | Justification   |
|------------------------|---|
| A                      | The discharge of treated bilge and deck drainage, sewage, greywater and food waste from vessels is a commonly practiced activity. |

| ALARP Decision Context | Justification   |
|------------------------|---|
|                        | <p>Vessel operations are infrequent (&lt;1 every 2 years) and of short duration (generally less than 4 weeks).</p> <p>At both the national and international level, potential impacts are well regulated through legislative instruments that specify best practice control measures. The Consequence Level was identified as Slight (the lowest level).</p> <p>During consultation with relevant persons, no objections or claims regarding waste management were made.</p> <p>TGPPL believes ALARP Decision Context A should apply.</p> |

**Table 6-55: Good Practice Controls**

| Good Practice  | Control  | Rationale   |
|--|--|---|
| <p>MARPOL Annex I Regulations for Prevention of Pollution by Oil</p> <p>MARPOL Annex IV Regulations for Prevention of Pollution by Sewage from Ships</p> <p>MARPOL Annex V Regulations for the Prevention of Pollution from Garbage from Ships</p> | <p><b>CM15:</b> Compliance with MARPOL Annex IV – sewage treatment plant</p> <p><b>CM16:</b> Planned Maintenance System (PMS) – sewage treatment plant (STP)</p> <p><b>CM17:</b> Discharge criteria of food waste</p> <p><b>CM18:</b> Compliance with MARPOL Annex V – prevention of pollution from garbage</p> <p><b>CM19:</b> Planned Maintenance System – food macerator</p> <p><b>CM20:</b> Compliance with MARPOL Annex I – prevention of pollution from oil</p> <p><b>CM21:</b> Discharge criteria of oily water separator</p> <p><b>CM22:</b> Waste handling and storage procedures</p> | <p>MARPOL Annex I Regulations for the Prevention of Pollution by Oil requires vessels (as appropriate to class) to hold an International Oil Pollution Prevention Certificate, are equipped with an approved oil discharge monitoring and control system that ensures oil in water concentration of treated bilge water is &lt;15 ppm, and that the vessel maintains an Oil Record Book.</p> <p>MARPOL Annex IV Regulations for the Prevention of Pollution by Sewage from Ships specifically requires vessels (as appropriate to class) to hold an International Sewage Pollution Prevention certificate. Sewage treated in a MARPOL-compliant sewage treatment plants may be discharged no less than 3 nm from shore, and untreated sewage no less than 12 nm.</p> <p>MARPOL Annex V Regulations for the Prevention of Pollution by Garbage from Ships specifically requires that food waste is macerated or ground to particle size. Vessels use deck cleaning products which are not classed as a harmful substance as defined in MARPOL Annex III nor contain a component that is carcinogenic, mutagenic or reprotoxic.</p> |

**Table 6-56: Engineering Risk Assessment**

| Additional, alternative control   | Benefit  | Cost/feasibility   | Adopted  |
|---|--|--|--|
| <p>Vessel ROV or crane may be used to attempt recovery of solid wastes lost overboard.</p> <p>Where safe and practicable for this activity will consider:</p> <ul style="list-style-type: none"> <li>risk to personnel to retrieve object</li> <li>whether the location of the object is in recoverable water depths</li> <li>object's proximity to subsea infrastructure</li> <li>ability to recover the object (i.e. nature of object, lifting equipment or, ROV availability and suitable weather).</li> </ul> <p>Any material dropped objects/waste that remain in the title will undergo an impact assessment and be added to the inventory.</p> | <p>Occurs after an unplanned release of solid waste and therefore no change to the likelihood. Since the waste objects may be recovered, a reduction in consequence is possible.</p> | <p>May not always be possible. Assessed case by case.</p> <p>Potentially significant cost.</p> | <p>Adopted where practical and safe to do so. (CM10)</p> |

## 6.7.6 Demonstration of Acceptability

**Table 6-57: Demonstration of Acceptability Test**

| Factor                             | Demonstration criteria  | Rationale  |
|------------------------------------|---|--|
| Principles of ESD                  | No potential to affect biological diversity and ecological integrity.                           | The potential impacts associated with this aspect are considered localised and short-term. It is not considered to have the potential to affect biological diversity or ecological integrity.  |
|                                    | Activity does not have the potential to result in serious or irreversible environmental damage. | The activities were evaluated as having the potential to result in a Consequence Level – Slight. This is not considered to have the potential to result in serious or irreversible environmental damage.   |
| Legislative and other requirements | Legislative and other requirements have been identified and met.                                | <p>MARPOL Annexes I, IV and V requirements have been adopted.</p> <p>The following legislative requirements are considered relevant as they apply to the implementation of MARPOL in Australia.</p> <ul style="list-style-type: none"> <li>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</li> <li>Navigation Act 2012 – Chapter 4 (Prevention of Pollution)</li> <li>Marine Order 91 (Marine Pollution Prevention – Oil) 2014</li> </ul> |

| Factor                | Demonstration criteria  | Rationale   |
|-----------------------|---|---|
|                       |   | <ul style="list-style-type: none"> <li>• Marine Order 95 (Marine Pollution Prevention – Garbage) 2018</li> <li>• Marine Order 96 (Marine Pollution Prevention – Sewage) 2018</li> </ul>   |
| Internal context      | Consistent with TGP Environment Policy Statement.   | Proposed activities are consistent with the TGP Environment Policy Statement, in particular “comply with all relevant legislation, regulations, codes of practice and standards” and “conducting all activities in a manner consistent with the principles of sustainable management and caring for the environment”. |
| External context      | Relevant person concerns have been considered/addressed through the consultation process. | No specific relevant person concerns have been raised concerning waste management.  |
| Acceptability outcome | <b>Acceptable</b>   |   |

## 6.8 Unplanned Discharges: Chemicals

**Table 6-58: Impact/Risk Evaluation Summary**

| Source of Impact/Risk                          | Environmental Value Potentially Impacted |               |             |                     |         |                | Evaluation    |                 |             |              |               |
|--|--|---------------|-------------|---------------------|---------|----------------|---------------|-----------------|-------------|--------------|---------------|
|  | Seabed Sediment                          | Water Quality | Air Quality | Ecosystem / Habitat | Species | Socio-economic | Decision Type | Likelihood      | Consequence | Risk Ranking | Acceptability |
| Accidental loss of chemicals from Vessels/ ASV |  | ✓             |             |                     | ✓       |                | A             | Highly Unlikely | Minor       | Low          | Acceptable    |
| Minor chemical spill from deck (less than 75L) |  | ✓             |             |                     | ✓       |                |               | Highly Unlikely | Slight      | Low          |               |

### 6.8.1 Impact of Activities

There will be no environmental impacts associated with chemical management during the normal day to day operation of the Offshore TGP. Daily pipeline operations (i.e. continuous transport of gas) are completely internal to the pipeline, with no use of chemicals or liquid hydrocarbons.

Environmental impacts from chemicals can only potentially occur during Offshore TGP inspection and maintenance activities using vessels, however the range of chemicals used in the operation and maintenance of the Offshore TGP is expected to be relatively minor. The main chemicals used during subsea pipeline inspection and maintenance activities are:

- Hydraulic oils used in ROVs / AUVs and vehicle recovery equipment
- Minor, working volumes of miscellaneous chemicals on board the vessel; and
- Grout (concrete) used in subsea pipeline span correction

As described in Section 2.2.1.9, Offshore TGP maintenance activities may include span correction, in which supports are installed, in the form of grout-filled bags, underneath the centre of the span. Each bag is placed under the subsea pipeline using a ROV and inflated with grout (concrete) via a hose connection to the support vessel. Due to its chemical properties, infrequent use and small volumes used, grout used in Offshore TGP maintenance is not expected to have any adverse impacts on the marine environment. Loss of grout is expected to only occur when grout hose decoupling from grout bag, releasing residual grout entrained within the nozzle with negligible quantities. In the event of an unplanned release e.g. caused by a hose rupture the maximum volume released (conservatively, on the basis of a 2" hose in 70m of water) is 250 kg. Grouting operations will be monitored by ROV / AUV, therefore, any loss of grout during filling of bags will be easily identified and the pump stopped. Thus, the volume of grout lost will be what is within the hose.

The maximum volume of other liquid chemicals stored on-board vessels will be no greater than 75 L.

Shipboard chemical management (i.e. chemicals used in typical operation of all commercial vessels, such as biofouling materials, etc.) are generally covered in vessel maintenance manuals and are required to be provided as part of tender documentation for TGP projects.

Therefore, the only credible scenarios identified for the Offshore TGP that could potentially result in a chemical spill to the marine environment are:

- Rupture of, or leak from, a hydraulic hose on a ROV/AUV (maximum 100 L)

- Rupture of, or leak from, a grout hose (maximum 250 kg)
- Loss of containment of other liquid chemicals from the vessel deck (maximum 75 L)

### 6.8.2 Identification of Environmental Risks

The key potential environmental impacts related to loss of hydraulic oil from an ROV / AUV, accidental release of grout or spill of other liquid chemicals from the vessel deck during Offshore TGP inspection and maintenance activities are:

- *Very minor, localised, short-term contamination of the local marine environment, no impact on marine ecosystems or marine fauna expected; and*
- *Very minor, localised, short-term visible pollution / reduction of visual amenity*

Offshore TGP inspection and maintenance vessels are expected to be required no more than once every 2 years on average and only for a limited number of days. The short survey time and size of vessels will limit the amount of chemicals used or stored on board (other than fuels – refer to Section 6.11) during Offshore TGP inspection / maintenance activities.

Most of the inspection and maintenance activities will be occurring in open ocean and no marine fauna populations are known to inhabit the immediate area of the Offshore TGP outside the coastal zone. Activities during Offshore TGP inspection and maintenance will be confined to areas located at least 8 km from the nearest onshore breeding or home habitat. Should a spill occur, the risk of adverse environmental impact is considered extremely low given the use of low impact chemicals, the small volume of chemicals stored and rapid dispersion of any spilled chemical in the high energy, open ocean environment.

Works in near coastal environments at either end of the Offshore TGP are generally undertaken using smaller vessels than those used for open ocean work. Such operations are generally diver-based operations, of smaller scale than the major open ocean surveys and, therefore, the volume of chemicals used will be lower.

It is considered that the greatest risk associated with chemical use would be a leak from, or rupture of, a hydraulic line on survey equipment. However, risks associated with hydraulic oil spills are minimal due to the following factors:

- Controls currently in place (equipment checks, audits, ROV/AUV procedures, qualified personnel, weather windows of operation, etc.)
- Minimal volumes of hydraulic oil (maximum 100 L)  
Very rare deployment of an ROV/AUV
- Closed loop system with no planned discharge and use of internationally recognised low environmental impact hydraulic fluids

### 6.8.3 ERA Summary

The risk assessment associated with chemical management is summarised in Table 6-59.

**Table 6-59: ERA Summary**

| Activity   | Potential incident / hazard   | Potential environmental impacts   | Residual risk |
|--|---|---|---------------|
| Offshore TGP inspection or maintenance using vessels | Release of grout during bag filling (maximum 250 kg)                      | Very minor, localised, short-term contamination of the local marine environment, no impact on marine ecosystems or marine fauna expected. | Low           |
|  | Rupture of, or leak from, a hydraulic hose on a ROV / AUV (maximum 100 L) |   | Low           |

| Activity | Potential incident / hazard   | Potential environmental impacts  | Residual risk |
|----------|---|--|---------------|
|          | Loss of containment of chemicals stored on the vessel (maximum total storage 75 L). | Very minor, localised, short-term visible pollution / reduction of visual amenity. | Low           |

#### 6.8.4 Environmental Control Measures

The following controls and mitigation measures have been adopted to ensure appropriate environmental management of contractor vessels along the Offshore TGP route and to reduce environmental risks and impacts associated with chemical management to ALARP:

- **CM6:** Maintenance and repair procedures
- **CM24:** ROV operating procedures
- **CM25:** Planned maintenance system (PMS) – ROV
- **CM26:** Chemical storage and handling procedures
- **CM27:** SOPEP (or equivalent)
- **CM28:** Chemical selection process
- **CM44:** Grouting procedure
- **CM45:** ROV IMCA Audit

The environmental performance outcomes and environmental performance standards for the controls above are given in Appendix F.

#### 6.8.5 Assessment of ALARP

Given the control measures listed above, and the infrequent nature, relatively small scale and short duration of Offshore TGP inspection and maintenance activities, the likelihood of a chemical/hydraulic oil spill to the environment is considered extremely low. The risk to the environment is therefore considered low and the risks associated with all chemical or hydraulic oil spill scenarios are considered to be ALARP.

**Table 6-60: ALARP Decision Context and Justification**

| ALARP Decision Context | Justification  |
|------------------------|--|
| A                      | <p>Handling and storing chemicals on vessels is commonplace in offshore environments nationally and internationally. There is a good understanding of the sources of potential spills, and the control measures required to manage these.</p> <p>Vessel operations are infrequent (&lt;1 every 2 years) and of short duration (generally less than 4 weeks). The impacts associated with chemical management were assessed as Consequence Level Minor.</p> <p>During consultation with relevant persons, no objections or claims regarding impact from chemical management were made.</p> <p>TGPPL believes ALARP Decision Context A should apply.</p> |

**Table 6-61: Good Practice Controls**

| Good Practice  | Control  | Rationale  |
|--|--|--|
| ROV condition check  | <p><b>CM24:</b> ROV operating procedures</p> <p><b>CM25:</b> Planned Maintenance System (PMS) – ROV</p> <p><b>CM45:</b> ROV IMCA Audit</p> | <p>Prior to chartering an ROV, it is industry good practice to obtain an International Marine Contractors Association (IMCA) survey report. An IMCA audit is a verification tool which states an ROV is in operational readiness.</p> <p>ROV operations will be undertaken in accordance with approved operating procedures, and the ROV will be maintained in accordance with the vessel PMS schedule.</p>  |
| Pipeline maintenance and repair                                | <b>CM6:</b> Maintenance and repair procedures  | All pipeline maintenance activities (i.e. jetting, installing concrete mattress/grout bags) is undertaken in accordance with approved procedures.  |
| Shipboard Oil Pollution Emergency Plan (SOPEP)                 | <b>CM27:</b> SOPEP (or equivalent)   | <p>MARPOL Annex I Regulations for the Prevention of Pollution by Oil specifically require that a SOPEP (or equivalent, according to class, i.e. SMPEP) is in place.</p> <p>To prepare for a spill event, the SOPEP details:</p> <ul style="list-style-type: none"> <li>• response equipment available to control a spill event</li> <li>• review cycle to ensure that the SOPEP is kept up to date</li> <li>• testing requirements, including the frequency and nature of these tests.</li> </ul> <p>In the event of a spill, the SOPEP details:</p> <ul style="list-style-type: none"> <li>• reporting requirements and a list of authorities to be contacted</li> <li>• activities to be undertaken to control the release</li> <li>• procedures for coordinating with local authorities.</li> </ul> |
| Containment of chemicals and oils to prevent spills overboard. | <b>CM26:</b> Chemical storage and handling procedures  | The storage of oils and chemicals are to be adequately contained in line with industry good practice.  |
| Grouting operations  | <b>CM44:</b> Grouting procedures   | Grouting equipment will be operated and maintained in accordance with approved procedures to minimise release into the marine environment.   |

| Good Practice  | Control                                 | Rationale  |
|--|---|--|
| Chemicals selected with lowest practicable environmental impacts and risks subject to technical constraints. | <b>CM28:</b> Chemical selection process | Chemicals planned to be discharged will meet the OCNS classification of CHARM Gold or Silver, or non-CHARM E or D.         |
| Spill kits positioned in high-risk locations around the vessel (excluding USV)                               | <b>CM27:</b> SOPEP (or equivalent)      | Spill kits would reduce the likelihood of a deck spill from entering the marine environment. The consequence is unchanged. |

**Table 6-62: Engineering Risk Assessment**

| Additional, alternative control  | Benefit   | Cost/feasibility   | Adopted     |
|--|---|--|-------------|
| Reduction in chemical and hydrocarbon volumes stored onboard the vessel. | No reduction likelihood or consequence since chemicals will still be required to enable activities to occur | Reducing chemical and hydrocarbon stores would require the vessel to return to port more frequently for restocking, thus increase survey timing. | Not adopted |

### 6.8.6 Demonstration of Acceptability

**Table 6-63: Demonstration of Acceptability Test**

| Factor            | Demonstration criteria  | Rationale   |
|-------------------|---|---|
| Principles of ESD | No potential to affect biological diversity and ecological integrity.                           | The potential impacts associated with this aspect are considered localised and short-term. It is not considered to have the potential to affect biological diversity or ecological integrity.           |
|                   | Activity does not have the potential to result in serious or irreversible environmental damage. | The activities were evaluated as having the potential to result in a Consequence Level - Minor. This is not considered to have the potential to result in serious or irreversible environmental damage. |

| Factor                             | Demonstration criteria  | Rationale   |
|------------------------------------|---|---|
| Legislative and other requirements | Legislative and other requirements have been identified and met.                          | <p>MARPOL Annex I requirements have been adopted.</p> <p>The following legislative instruments are considered relevant as they apply to the implementation of MARPOL in Australia.</p> <ul style="list-style-type: none"> <li>• Protection of the Sea (Prevention of Pollution from Ships) Act 1983</li> <li>• Navigation Act 2012 – Chapter 4 (Prevention of Pollution)</li> <li>• Marine Order 91 (Marine Pollution Prevention – Oil) 2014</li> </ul> <p>Impacts from activities are considered to be localised and short-term. Environment Reference Standard 2021 indicators and objectives for coastal waters have been considered. Adoption of the control measures listed in Section 6.8.4, will ensure compliance with the EP Act, Regulations and ERS.</p> |
| Internal context                   | Consistent with TGP Environment Policy Statement.   | Proposed activities are consistent with the TGP Environment Policy Statement, in particular “comply with all relevant legislation, regulations, codes of practice and standards” and “conducting all activities in a manner consistent with the principles of sustainable management and caring for the environment”.   |
| External context                   | Relevant person concerns have been considered/addressed through the consultation process. | No specific relevant person concerns have been raised concerning chemical management.   |
| Acceptability outcome              | <b>Acceptable</b>   |   |

## 6.9 Physical Presence: Accidental Introduction of Invasive Marine Species

**Table 6-64: Impact/Risk Evaluation Summary**

| Source of Impact/Risk   | Environmental Value Potentially Impacted |               |             |                     |         |                | Evaluation    |                 |             |              |               |
|---|--|---------------|-------------|---------------------|---------|----------------|---------------|-----------------|-------------|--------------|---------------|
|   | Seabed Sediment                          | Water Quality | Air Quality | Ecosystem / Habitat | Species | Socio-economic | Decision Type | Likelihood      | Consequence | Risk Ranking | Acceptability |
| Introduction and establishment of invasive marine species within OA from vessel biofouling              |  |               |             | ✓                   | ✓       | ✓              | A             | Highly Unlikely | Slight      | Low          | Acceptable    |
| Introduction and establishment of invasive marine species within OA from poor handling of ballast water |  |               |             | ✓                   | ✓       | ✓              |               | Highly Unlikely | Slight      | Low          |               |

### 6.9.1 Impact of Activities

An invasive marine species (IMS) is a species occurring, as a result of human activities, beyond its accepted normal distribution and which threaten the environment, human health or economic values by the damage it causes (DCCEEW, 2024d). Not all non-indigenous marine species introduced into new environments will cause demonstrable effects, some are relatively benign, and few have spread widely beyond ports and harbours. The following Offshore TGP maintenance and inspection activities and incidents have the potential to result in the introduction of IMS in the activity area:

- Discharge of ballast water from support vessels containing foreign species; and
- Translocation of foreign species through biofouling of support vessel hull and niches (e.g. sea chests, bilges, strainers)

### 6.9.2 Identification of Environmental Risks

Potential environmental impacts related to ballast water and biofouling management will only occur during Offshore TGP inspection and maintenance activities using vessels. The key potential environmental impacts related to inappropriate ballast water and biofouling practices are:

- *Potential displacement of native species, altering ecosystem function and affecting biodiversity*  
Successful IMS invasion requires the following three steps:
  - Colonisation and establishment of the marine pest on a vector (e.g., vessel hull) in a donor region (e.g., home port)
  - Survival of the settled marine species on the vector during the voyage from the donor to the recipient region (e.g., project area)
  - Colonisation (e.g., dislodgement or reproduction) of the marine species in the recipient region, followed by successful establishment of a viable new local population

It is estimated that there are more than 250 exotic species in the Australian marine environment and that about one in six to ten introduced marine species become 'pests' (i.e. the effects of the introduced organisms are sufficiently severe) (McDonald, 2008).

IMS are likely to have little or no natural competition or predators, thus potentially outcompeting native species for food or space, preying on native species, or changing the nature of the environment.

Marine pest species can also deplete fishing grounds and aquaculture stock, with between 10% and 40% of Australia's fishing industry being potentially vulnerable to marine pest incursion. For example, the introduction of the Northern Pacific Sea Star (*Asterias amurensis*) in Victorian and Tasmanian waters was linked to a decline in scallop fisheries. Similarly, the New Zealand screw shell (*Maoricolpus roseus*), thought to have been introduced on dry ballast or through the live oyster trade, may threaten other mollusc species, including scallops. The New Zealand screw shell can densely blanket the sea floor with live and dead shells, and faecal pellets and therefore also smother other seafloor species (ABC Science, 2000).

Marine pests can also damage marine and industrial infrastructure, such as encrusting jetties and marinas or blocking industrial water intake pipes. By building up on vessel hulls, they can slow the vessels down and increase fuel consumption.

The benthic habitat within the operational area is characterised by a soft sediment and shell/rubble seabed, infauna communities, and epibiotic communities (typically sponges).

Once established, some pests can be difficult to eradicate and therefore there is the potential for a long-term or persistent change in habitat structure. It has been found that highly disturbed environments (such as marinas) are more susceptible to colonisation than open-water environments, where the number of dilutions and the degree of dispersal are high (Paulay, Kirkendale, Lambert, & Meyer, 2002).

Compliance with regulatory requirements for the management of ballast water and ensuring all vessels are assessed as posing a low biofouling risk in accordance with national guidelines will significantly reduce the likelihood of translocation of an IMS. Successful colonisation in the recipient region would be difficult given the nature of the benthic habitats near the operational area (i.e. predominantly bare sands with patchy occurrences of hard substrate). If an IMS was introduced, and if it did colonise an area, it is expected that any colony would remain fragmented and isolated. Therefore, there is the potential for localised loss of ecological diversity.

TGP will source vessels locally where possible. The risk of IMS introduction or establishment is considered greatest in shallow coastal waters (Knight, Barry, Summerson, Cameron, & Darbyshire, 2007), in areas where large numbers of vessels are present and are stationary for an extended period. While there is the potential to introduce invasive marine species from TGP activities, with the adoption of control measures listed in Section 6.9.4, it is considered Highly Unlikely that this activity would result in the introduction of an IMS and any subsequent impact to receptors.

### 6.9.3 ERA Summary

**Table 6-65: ERA Summary**

| Activity   | Potential incident / hazard                            | Potential environmental impacts   | Residual risk |
|--|--|---|---------------|
| Offshore TGP inspection or maintenance using vessels | Inappropriate ballast water and biofouling management. | Introduction of exotic marine pests, potentially displacing native species, altering ecosystem function and affecting biodiversity. | Low           |

### 6.9.4 Environmental Control Measures

With respect to marine pests and biofouling, the following control measures are to be implemented, where applicable to the vessel used:

- **CM29:** Ballast Water Management Plan and Certificate
- **CM30:** Ballast Water Record System

- **CM31:** Biosecurity clearance when entering Australia
- **CM32:** Biofouling management records
- **CM33:** Invasive Marine Species risk assessment process
- **CM34:** Immersible retrievable equipment cleaning

The environmental performance outcomes and environmental performance standards for the controls above are given in Appendix F.

### 6.9.5 Assessment of ALARP

Given the control measures listed above, and the infrequent nature, relatively small scale and short duration of Offshore TGP inspection and maintenance activities, the risk of adverse environmental impacts associated with inappropriate management of ballast water and biofouling is considered low and therefore ALARP.

**Table 6-66: ALARP Decision Context and Justification**

| ALARP Decision Context | Justification   |
|------------------------|---|
| A                      | <p>Controls to manage the introduction of invasive marine species from ballast water or biofouling are well understood and managed by national and international regulations and industry guidelines.</p> <p>The potential for an irreversible (localised) effect on benthic habitats has been assessed as having a Consequence Level of Slight (the lowest level).</p> <p>During consultation with relevant persons, no objections or claims regarding impact from the introduction of invasive marine species were made.</p> <p>TGPPL believes ALARP Decision Context A should apply.</p> |

**Table 6-67: Good Practice Controls**

| Good Practice  | Control   | Rationale   |
|--|---|---|
| <p>International Convention for the Control and Management of Ships' Ballast Water and Sediment (IMO, 2018)</p> <p>Reducing Marine Pest Biosecurity risks through good practice biofouling management (NOPSEMA, 2024a)</p> | <p><b>CM29:</b> Ballast Water Management Plan and Certificate</p> <p><b>CM30:</b> Ballast Water Record System</p> | <p>The International Convention for the Control and Management of Ships' Ballast Waste and Sediments requires signatory flag states to ensure that ships flagged by them comply with standards and procedures for the management and control of ships' ballast water and sediments. The Convention aims to prevent the spread of harmful aquatic organisms from one region to another and halt damage to the marine environment from ballast water discharge, by minimising the uptake and subsequent discharge of sediments and organisms.</p> <p>The Convention requires all vessels designed to carry ballast water to implement a ballast water management plan and to carry out ballast water management procedures in accordance with approved methods. Specifically, these are:</p> <ul style="list-style-type: none"> <li>• Use of a ballast water management system</li> </ul> |

| Good Practice   | Control   | Rationale   |
|---|---|---|
|   |   | <ul style="list-style-type: none"> <li>Ballast water exchange in an acceptable area (at least 12 NM from land and in at least 50 m water depth)</li> <li>Use of low-risk ballast water</li> <li>Retention of high-risk ballast water on board</li> <li>Discharge to an approved ballast water reception facility</li> </ul> <p>Maintenance of ballast water record system in accordance with Regulation B-2 of the Annex to the IMO Ballast Water Management Convention including:</p> <ul style="list-style-type: none"> <li>start and finish coordinates</li> <li>actual pumping times</li> <li>residual volume remaining in the tank at the end the empty cycle prior to refill (empty refill method only)</li> </ul>  |
| <p>Australian Biofouling Management Requirements (DAFF, 2023)</p> <p>Reducing Marine Pest Biosecurity risks through good practice biofouling management (NOPSEMA, 2024a)</p>    | <p><b>CM32:</b> Biofouling management records</p> <p><b>CM33:</b> Invasive Marine Species risk assessment process</p> <p><b>CM34:</b> Immersible retrievable equipment cleaning</p> | <p>Consistent with the best practice approach set out in the IMO Guidelines for Management of Ships Biofouling, the TGP IMS risk assessment will consider:</p> <ul style="list-style-type: none"> <li>transport method (dry vs wet haulage)</li> <li>presence and age of antifouling coating</li> <li>evidence of in-water inspection by divers or inspection in dry dock and cleaning of hull</li> <li>presence and operation of internal seawater treatments systems, if applicable</li> </ul> <p>Where the assessment results in "low risk", the assessment is provided to the Principal Officer IMS, Department of Jobs, Precincts and Regions. The vessel is considered acceptable if the Principal Officer is satisfied that no further action is necessary.</p> <p>If the risk is assessed as uncertain or high, or the Principal Officer recommends further action, an IMS expert is consulted to determine if the vessel risk can be reduced through additional controls. If the risk can not be reduced an alternative vessel will be sought.</p> |
| <p>Australian Ballast Water Management Requirements (DAWE, 2020)</p> <p>Biosecurity Act 2015</p> <p>Reducing Marine Pest Biosecurity risks through good practice biofouling</p> | <p><b>CM31:</b> Biosecurity clearance when entering Australia</p>   | <p>Compliance with the Australian Ballast Water Management Requirements</p> <p>Where applicable (if the vessel has mobilised from outside Australian waters), submission of detailed pre-arrival information to the DAFF, via the Maritime Arrivals Reporting System (MARS), no later than 12 hours prior to arrival in Australian waters. The vessel</p>   |

| Good Practice               | Control | Rationale  |
|-----------------------------|---------|--|
| management (NOPSEMA, 2024a) |         | operator must comply with this requirement under Section 193 of the Biosecurity Act 2015 |

**Table 6-68: Engineering Risk Assessment**

| Additional, alternative control | Benefit                               | Cost/feasibility                      | Adopted     |
|---------------------------------|---------------------------------------|---------------------------------------|-------------|
| Eliminate the use of vessels    | Not assessed, control is not feasible | Not assessed, control is not feasible | Not adopted |

## 6.9.6 Demonstration of Acceptability

**Table 6-69: Demonstration of Acceptability Test**

| Factor                             | Demonstration criteria  | Rationale   |
|------------------------------------|---|---|
| Principles of ESD                  | No potential to affect biological diversity and ecological integrity.                           | The risk of introducing invasive marine species was assessed as Low and is therefore considered acceptable.   |
|                                    | Activity does not have the potential to result in serious or irreversible environmental damage. | The likelihood of introducing invasive marine species with the adoption of the proposed control measures was assessed as being Highly Unlikely.   |
| Legislative and other requirements | Legislative and other requirements have been identified and met.                                | <p>The requirements of the Ballast Water Management Convention have been adopted.</p> <p>The following legislative requirements are considered relevant as they apply to the implementation of the Ballast Water Management Convention in Australia.</p> <ul style="list-style-type: none"> <li>• Biosecurity Act 2015</li> <li>• Protection of the Sea (Harmful Anti-fouling Systems) Act 2006</li> <li>• Marine Order 98 (Marine Pollution – Anti-fouling Systems) 2013</li> </ul> <p>Requirements for assessing and mitigating biofouling risk in accordance with the National Biofouling Guidelines for the Petroleum Production and Exploration Industry (DAWE, 2022) have been adopted.</p> |
| Internal context                   | Consistent with TGP Environment Policy Statement.   | Proposed activities are consistent with the TGP Environment Policy Statement, in particular “comply with all relevant legislation, regulations, codes of practice and standards” and “conducting all activities in a manner consistent with the principles of sustainable management and caring for the environment”.   |

| Factor                | Demonstration criteria  | Rationale   |
|-----------------------|---|---|
| External context      | Relevant person concerns have been considered/addressed through the consultation process. | No specific relevant person concerns have been raised concerning the introduction of invasive marine species. |
| Acceptability outcome | <b>Acceptable</b>   |   |

## 6.10 Unplanned Hydrocarbon Release

**Table 6-70: Impact/Risk Evaluation Summary**

| Source of Impact/Risk   | Environmental Value Potentially Impacted |               |             |                     |         |                | Evaluation    |                 |             |              |               |
|---|--|---------------|-------------|---------------------|---------|----------------|---------------|-----------------|-------------|--------------|---------------|
|   | Seabed Sediment                          | Water Quality | Air Quality | Ecosystem / Habitat | Species | Socio-economic | Decision Type | Likelihood      | Consequence | Risk Ranking | Acceptability |
| Loss of hydrocarbons to marine environment in the pipeline Operational Area due to a vessel collision (with Project Vessels or third-party vessels) |  | ✓             |             | ✓                   | ✓       | ✓              | A             | Highly Unlikely | Minor       | Low          | Acceptable    |
| Hydraulic oil leak to the marine environment  |  | ✓             |             | ✓                   | ✓       | ✓              |               | Highly Unlikely | Slight      | Low          |               |

### 6.10.1 Impact of Activities

There will be no environmental impacts associated with fuel during the normal day to day operation of the Offshore TGP. Daily pipeline operations (i.e. continuous transport of gas) are completely internal to the pipeline, with no use of fuel or other liquid hydrocarbons.

Environmental impacts from fuel can only potentially occur during Offshore TGP inspection and maintenance activities using vessels. Fuel used for vessel operation can pose a threat to the marine environment and vessel personnel if it is not managed appropriately and is allowed to escape to the environment.

While the size of vessels used in Offshore TGP inspection and maintenance activities may vary according to availability and scale of the required works, the type of fuel used for vessel operations is restricted to low sulphur Marine Diesel Oil (MDO) or Marine Gas Oil (MGO).

The only credible scenarios identified for the Offshore TGP that could potentially result in a fuel spill to the marine environment are:

- Fuel tank breach through vessel accidents (including grounding) during extreme weather events; and
- Fuel tank rupture due to collision between vessels

As stated in Section 2.2.1.2, the fuel capacity of vessels potentially used in Offshore TGP inspection and maintenance activities ranges from 48 m<sup>3</sup> to 530 m<sup>3</sup>, and the fuel is spread between numerous tanks. However, based on AMSA (2012), the maximum credible fuel spill volume associated with inspection / maintenance vessels is 40,000 L, being the maximum fuel capacity of one fuel tank of the largest expected vessel. While an USV has a fuel capacity of 3.3 m<sup>3</sup> (refer to Section 2.2.1.3).

### 6.10.2 Identification of Environmental Risks

The key potential environmental impacts from a vessel fuel storage and use in proximity to the Offshore TGP are listed below. With the maximum fuel capacity of the USV being less than 10% of a credible crewed vessel spill the impacts are anticipated to be more localised and disperse rapidly.

### 6.10.2.1 Contamination of the local marine environment, leading to degradation of marine ecosystems and potential toxicity impacts on marine biota (e.g. death, injury)

On release to the marine environment, diesel would be distributed over time into the following components:

- surface
- (in-water) entrained (non-dissolved oil droplets that are physically entrained by wave action)
- (in-water) dissolved (principally the aromatic hydrocarbons)
- evaporated; and
- decayed

Of these components, surface hydrocarbons and in-water entrained hydrocarbons and dissolved aromatics have the most significant impact on the marine environment. These are discussed in further detail below.

As detailed in Section 2.2.1.2, oil spill trajectory modelling with a spill volume of 40,000 L of fuel oil was undertaken to determine the areas that may be impacted (See Figure 2-10). The potential environmental impacts to receptors within the EMBA are discussed in Table 6-71.

**Table 6-71: Consequence Evaluation to Receptors within the EMBA - sea surface, shoreline and in-water**

| Receptor | Exposure Evaluation   | Consequence Evaluation  |
|----------|---|---|
| Plankton | Plankton are likely to be exposed to entrained hydrocarbons. Effects will be greatest in the upper layer of the water column and areas close to the spill source where hydrocarbon concentrations are likely to be highest. | <p>Relatively low concentrations of hydrocarbon are toxic to both zooplankton and ichthyoplankton (fish eggs and larvae) which risk exposure through ingestion, inhalation and dermal contact.</p> <p>Phytoplankton are typically not sensitive to the impacts of oil, though they do accumulate it rapidly (Hook <i>et al.</i>, 2016) due to their small size and high surface area to volume ratio. Phytoplankton exposed to hydrocarbons may affect their ability to photosynthesize.</p> <p>Plankton are numerous and widespread but do act as the basis for the marine food web, meaning that an oil spill in any one location is unlikely to have long-lasting impacts on plankton populations at a regional level. Once background water quality conditions have re-established, the plankton community may take weeks to months to recover (ITOPF, 2011).</p> |

| Receptor  | Exposure Evaluation   | Consequence Evaluation   |
|---|---|--|
| Fish  | <p>Since fish and sharks do not generally break the sea surface, the exposure of surface hydrocarbons to fish and shark species are unlikely to occur. Near the sea surface, fish are able to detect and avoid contact with surface slicks meaning fish mortalities rarely occur in the event of a hydrocarbon spill in open waters (Volkman <i>et al.</i>, 2004).</p> <p>Entrained hydrocarbon droplets can physically affect fish exposed for an extended duration (weeks to months). Effects will be greatest in the upper layer of the water column and areas close to the spill source where hydrocarbon concentrations are likely to be highest.</p> <p>Several fish communities in these areas are demersal and therefore more prevalent towards the seabed, which is not likely to be exposed. Therefore, any impacts are expected to be highly localised.</p> <p>The Australian grayling spends most of its life in fresh water, with parts of the larval or juvenile stages spent in coastal marine waters, therefore it is not expected to be present in offshore waters in large numbers.</p> <p>There is a known foraging BIA for the White shark in the EMBA, however, it is not expected that this species spends a large amount of time close to the surface where concentrations may be highest. The White shark breeding BIA, adjacent to Ninety Mile Beach, is also within the EMBA.</p> | <p>Pelagic free-swimming fish and sharks are unlikely to suffer long-term damage from oil spill exposure because dissolved/entrained hydrocarbons in water are not expected to be sufficient to cause harm (ITOPF, 2011). Subsurface hydrocarbons could potentially result in acute exposure to marine biota such as juvenile fish, larvae, and planktonic organisms, although impacts are not expected to cause population-level impacts.</p> <p>Impacts on fish eggs and larvae entrained in the upper water column are not expected to be significant given the temporary nature of the resulting change in water quality, and the limited areal extent of the spill. As egg/larvae dispersal is widely distributed in the upper layers of the water column it is expected that current induced drift will rapidly replace any oil affected populations.</p> <p>Pelagic species of shark are at greatest risk because of their risk of consuming contaminated prey. White sharks are known to aggregate near Ninety Mile Beach and philopatric characteristics means they may return to the place of birth to breed even if habitats are contaminated. This species is widely distributed and thus unlikely to suffer ecologically important declines in abundance.</p> |
| Benthic habitats – bare substrate, macroalgae, corals | <p>The predominant benthic habitat in the EMBA is bare substrate. Suitable hard substrate for macroalgal beds including the threatened ‘Giant Kelp’ occur in surrounding the Kent Island Group. Corals are not a common habitat type in the EMBA however solitary soft corals may occur where suitable hard substrate, such as rocky reef or man-made structures, is present.</p>   | <p>Exposure to in-water hydrocarbons will occur predominantly in the surface layer and therefore any potential impact to benthic habitats will only occur in shallower nearshore waters.</p> <p>Impact by direct contact of benthic species with hydrocarbon in the deeper areas of EMBA is not expected given the surface nature of any diesel spill. Benthic invertebrate species closer to shore may be affected. Filter-feeding benthic invertebrates such as sponges, bryozoans, abalone and hydroids may be exposed to sub-lethal impacts however population level impacts are considered unlikely.</p> <p>Intertidal species of macroalgae are more prone to direct surface oil exposure than subtidal beds, however sub-lethal toxicity effects from in-water hydrocarbons may be observed.</p> <p>Sub-lethal toxicity effects on corals may result from direct contact with in-water hydrocarbons or indirectly through feeding on contaminated prey (plankton).</p>  |

| Receptor        | Exposure Evaluation   | Consequence Evaluation   |
|-----------------|---|--|
| Birds           | <p>Several listed Threatened, Migratory and/or listed marine species have the potential to be rafting, resting, diving and feeding within the spill area. Migratory or resident shorebirds, such as terns and plovers, foraging in the intertidal zone, or roosting or nesting on beaches and dunes along the Gippsland, Bass Strait islands and northern Tasmanian coastlines may also be exposed to oil.</p> <p>There are several foraging BIAs that are present within the area potentially exposed to surface hydrocarbons for albatross, petrel, and shearwater species. However, foraging BIAs are typically large broad areas. The birds can feed via surface skimming or diving – both exposing the bird to any oil on the water surface.</p> <p>Within the EMBA, breeding BIAs have been identified for the Common Diving and White-faced Storm Petrel around the Kent Group and Furneaux Group respectively. Foraging and breeding BIAs have also been identified for the Little Penguin around both the Kent and Furneaux Island groups.</p> | <p>Seabirds and shorebirds are sensitive to the impacts of oiling, with their vulnerability arising from the fact that they cross the air-water interface to feed, while their shoreline habitats may also be oiled (Hook <i>et al.</i>, 2016). Species that raft together in large flocks on the sea surface are particularly at risk (ITOPF, 2011). Penguins may also be especially vulnerable to oil because they spend a high portion of their time in the water and readily lose insulation and buoyancy if their feathers are oiled (Hook <i>et al.</i>, 2016).</p> <p>When first released, diesel has higher toxicity due to the presence of volatile components. Individual birds making contact close to the spill source at the time of the spill may be impacted; however, it is unlikely that many birds will be affected as sea surface oil is only predicted for the first 12 hours.</p> <p>Seabirds rafting, resting, diving or feeding at sea have the potential to encounter areas where hydrocarbons concentrations are greater than 10 g/m<sup>2</sup> (Gerači &amp; St Aubin, 1988) in the vicinity of the spill location and due to physical oiling may experience lethal surface concentrations. As such, acute or chronic toxicity impacts (death or long-term poor health) to birds are possible but unlikely for a diesel spill as the number of birds would be limited due to the small area and brief period of exposure above 10 g/m<sup>2</sup>.</p> <p>Therefore, potential impact would be limited to individuals, with population impacts not anticipated.</p> <p>The populations of seabird and shorebird species have a wide geographic range, meaning that impacts to individuals or even a population at one location will not necessarily extend to populations at other un-impacted locations.</p> |
| Marine reptiles | <p>There may be marine turtles in the area predicted to be exposed to surface oil. However, there are no BIAs or habitat critical to the survival of the species within this area. There are no turtle nesting beaches within the EMBA, so impacts to turtles from possible shoreline oiling will not occur.</p>  | <p>Marine turtles are vulnerable to the effects of oil at all life stages. Marine turtles can be exposed to surface oil externally (i.e. swimming through oil slicks) or internally (i.e. swallowing the oil). Ingested oil can harm internal organs and digestive function. Oil on their bodies can cause skin irritation and affect breathing.</p> <p>The number of marine turtles that may be exposed to surface diesel is expected to be low as there are no BIAs or habitat critical to the survival of the species present; however, turtles may be transient within the EMBA. Sea surface oil is only predicted for the first 12 hours limiting the period when oiling may occur. Therefore, potential impact would be limited to individuals, with population impacts not anticipated.</p>   |

| Receptor                             | Exposure Evaluation   | Consequence Evaluation   |
|--------------------------------------|---|--|
| <p>Marine mammals (pinnipeds)</p>    | <p>There may be pinnipeds in the area potentially exposed to surface or in water entrained hydrocarbons. Although, there are no BIAs within this area breeding colonies are present on a number of the Bass Strait islands within the EMBA.</p>   | <p>Breeding colonies (used to birth and nurse until pups are weaned) are particularly sensitive to hydrocarbon spills. Oiling may occur on the shorelines of Judgement Rocks and Tenth Island where fur seal colonies are located.</p> <p>Pinnipeds are vulnerable to sea surface exposures given they spend much of their time on or near the surface of the water, as they need to surface every few minutes to breathe. Exposure to surface oil can result in skin and eye irritations and disruptions to thermal regulation. Fur seals are particularly vulnerable to hypothermia from oiling of their fur however the characteristics of diesel reduce this risk.</p> <p>The number of pinnipeds that may be exposed to surface diesel is expected to be low. Sea surface oil is only predicted for the first 12 hours limiting the period when oiling may occur. Therefore, potential impact would be limited to individuals, with population impacts not anticipated.</p> <p>Exposure to entrained hydrocarbons in the water column or consumption of prey affected by the oil may cause sub-lethal impacts to pinnipeds. However, due to the temporary and localised nature of the spill, rapid loss of the volatile components of diesel in choppy and windy seas (such as that of the EMBA), and their widespread nature, is it not anticipated to result in long-term population viability effects.</p> |
| <p>Marine mammals (cetaceans)</p>    | <p>Several threatened, migratory and/or listed marine cetacean species have the potential to be migrating through or foraging within the area potentially exposed to surface or in water entrained hydrocarbons.</p> <p>There is a distribution and possible foraging BIA for Pygmy blue whales and a distribution and migration BIA for Southern right whales within the EMBA.</p> <p>Cetacean exposure to entrained hydrocarbons can result in physical coating as well as ingestion (Geraci and St Aubin, 1988). Such impacts are associated with 'fresh' hydrocarbon; the risk of impact declines rapidly as the diesel weathers.</p>   | <p>Physical contact by individual cetaceans with a surface diesel spill is unlikely to lead to any long term impacts. Given the mobility of cetaceans, only a small proportion of the population would surface in the affected areas, resulting in short-term and localised consequences.</p> <p>The potential for impacts to whales and dolphins would be limited to a relatively short period following the release and would need to coincide with pod foraging or migration to result in exposure to a large number of individuals. However, such exposure is not anticipated to result in long-term population viability effects.</p>   |
| <p>Shoreline habitat<br/>- sandy</p> | <p>The surface life of the diesel spill is predicted to be approximately 12 hours and therefore minimal shoreline contact is expected within the EMBA.</p> <p>The Gippsland and northern Tasmanian coasts which could possibly be contacted are dominated by sandy beaches with small rocky outcrops. Sandy beaches provide potential foraging and breeding habitat for numerous bird and pinniped species. These activities primarily occur above the high tide line, with exception of haul outs. Note, most of the oil on a sandy shore will be concentrated at, and below, the high tide mark. Sandy beaches are also inhabited by a diverse assemblage (although not always abundant) of infauna and macroinvertebrates.</p> | <p>Shoreline oiling may result in acute toxicity, and mortality, of invertebrate communities, especially as unweathered diesel will easily penetrate into sandy sediments. However, tidal action is expected to lead to rapid weathering of any hydrocarbons in the intertidal area and the populations of these communities would be likely to rapidly recover.</p>   |

| Receptor                                    | Exposure Evaluation  | Consequence Evaluation  |
|---|--|---|
| - rocky                                     | <p>Rocky shores are more common on the islands of Bass Strait including the Hogan Island Group, Curtis Island Group, Kent Group, Bass Pyramid Group and Tenth Island which are located within the EMBA.</p> <p>Exposed rocky shores are typically less sensitive to oil spills, with the exception of when wildlife habitats or breeding grounds (see also potential impacts to pinnipeds above) are present. Because the rocks do not absorb much oil, the spilled material is mostly held offshore and any oil that is deposited remains on the rock surface where it is subject to weathering. The rate of such weathering is dependent on many factors, the wave exposure, weather conditions and the shore characteristics are most important (IPIECA, 1995).</p> <p>As the oil is weathered it becomes more viscous and less toxic, often leaving only a small residue of tar on upper shore rocks. This residue can remain as a unsightly stain but it is unlikely to cause any more ecological damage.</p> | <p>Oil is not normally retained on rocky shores in a form or quantity that causes long term impacts and also because most rocky shore species have a considerable potential for re-establishing populations (IPIECA, 1995).</p>   |
| Commercial fisheries                        | <p>In-water exposure to entrained diesel may result in a reduction in commercially targeted marine species, resulting in impacts to commercial fishing and aquaculture.</p> <p>Actual, or perceptions of, contamination of seafood can affect commercial and recreational fishing and can impact seafood markets even after any actual risk to seafood from a spill has subsided (NOAA, 2002) which can have economic impacts to the industry.</p> <p>Several commercial fisheries overlap the EMBA.</p>   | <p>Any acute impacts are expected to be limited to small numbers of juvenile fish, larvae, and planktonic organisms, which are not expected to affect population viability or recruitment. Impacts from entrained exposure are unlikely to manifest at a fish population viability level.</p> <p>Any exclusion zone established would be limited to the immediate vicinity of the release point, and due to the rapid weathering of diesel would only be in place 1-3 days after release, therefore physical displacement of vessels which excludes fishing effort is unlikely to be a significant impact.</p>  |
| Recreation and tourism                      | <p>The surface life of the diesel spill is predicted to be approximately 12 hours and the modelling predicts surface oil extending into nearshore Victorian waters (including Ninety Mile Beach Marine National Park) and to the nearshore waters along the Ninety Mile Beach (part of which is in the Gippsland Lakes Coastal Park). Oil is predicted to contact the Kent Group Marine Reserve and the shorelines of Bass Strait islands including the Hogan and Kent Groups which offer opportunities for bird-watching, diving and recreational fishing.</p>  | <p>Tourism and recreation is also linked to the presence of marine fauna (e.g. whales, seals, birdwatching), particular habitats and locations for diving / swimming, boating or recreational fishing (see also sections on fish, birds, pinnipeds, cetaceans and coastal habitats above).</p> <p>Short-term impacts to nature-based tourism and other human uses of beaches or marinas (and nearshore waters) with resultant socio-economic consequences in local communities may occur as a result of temporary closures to protect human health or due to aesthetic factors and perceptions of a polluted environment that is not desirable to visit. However, given the short duration and limited extent of predicted exposure only short term, minor public impacts are expected.</p> |
| Cultural heritage - Indigenous and historic | <p>Surface oil is predicted to encroach upon nearshore waters in the vicinity of the Gunai Kurnai Native Title Determination Area and a number of historic shipwrecks.</p>   | <p>Visible sheen has the potential to reduce the visual amenity of cultural heritage sites such as indigenous or historic (e.g. shipwreck) protected areas. However, given the relatively short duration and limited extent of predicted exposure only short term, minor public impacts are expected.</p>   |
| AMP   | <p>The EMBA overlaps the Beagle Australian Marine Park.</p>  | <p>Potential impacts to sensitive receptors related to the Beagle AMP such as plankton and other marine fauna, are discussed in the appropriate sections above.</p>   |

| Receptor                    | Exposure Evaluation  | Consequence Evaluation   |
|-----------------------------|--|--|
| National Parks and Reserves | A number of areas adjacent to or within Victorian and Tasmanian waters have been declared as National Parks or Marine Protected Areas. The surface life of the diesel spill is predicted to be approximately 12 hours, and the modelling predicts surface oil contacting Ninety Mile Beach Marine National Park and the coastal waters along the Gippsland Lakes Coastal Park. Oil is predicted to contact the Kent Group Marine Reserve and the coastal waters of Bass Strait islands including the Kent Group National Park. | <p>Potential impacts to sensitive receptors related to the shorelines of terrestrial National Parks and Reserves, such as shoreline habitats and birds, are discussed in the appropriate sections above.</p> <p>Potential impacts to the sensitive receptors related Marine National Parks and Marine Sanctuaries, such as fish and other marine fauna, are discussed in the appropriate sections above.</p>   |
| KEF                         | The diesel plume may encroach upon the western-most part of the KEF: Upwelling East of Eden.   | <p>Potential impacts to sensitive receptors related to the KEF: Upwelling East of Eden such as plankton and other marine fauna, are discussed in the appropriate sections above.</p> <p>While a spill would not affect the upwelling itself, if the spill occurs at the time of an upwelling event, it may result in krill being exposed to in-water phase hydrocarbons. Pygmy blue whales feeding at this time may suffer from reduced availability of prey however these impacts are expected to be localised and temporary.</p> |

#### 6.10.2.2 Oiling of marine animals and coastlines

Most of the inspection and maintenance activities will be occurring in the open ocean and no marine fauna populations are known to inhabit the immediate area of the Offshore TGP outside the coastal zone. Activities during Offshore TGP inspection and maintenance will be confined to areas located at least 8 km from the nearest onshore breeding or home habitat. Further detailed in Table 6-71 above.

#### 6.10.2.3 Disturbance to marine fauna including mammals, birds, reptiles and other organisms (i.e. altered feeding, nesting nursing, mating or migrating behaviour)

Offshore TGP inspection and maintenance activities are expected to be required less than once every 2 years on average, with the length of any one voyage likely to be less than 4 weeks. Any activities are localised along the TGP route, with no activity of long-term duration at any one location.

#### 6.10.2.4 Visible pollution / reduction of visual amenity

Offshore TGP inspection and maintenance activities are expected to be required less than once every 2 years on average, with the length of any one voyage likely to be less than 4 weeks. Any activities are localised along the TGP route, with no activity of long-term duration at any one location.

Spills would be managed to minimise impact, as per Section 9.4. The visible pollution would not remain for an extended period, and due to controls is considered low likelihood.

#### 6.10.2.5 Disruption to other marine users such as commercial fishing and recreational users

See above point.

### 6.10.3 ERA Summary

The risk assessment associated with fuel management is summarised in Table 6-72.

**Table 6-72: ERA Summary**

| Activity   | Potential incident / hazard  | Potential environmental impacts   | Residual risk |
|--|--|---|---------------|
| Offshore TGP inspection or maintenance using vessels | Vessel accident during extreme weather events or vessel collision leading to fuel tank rupture and fuel spill. | Contamination of the local marine environment leading to degradation of marine ecosystems and potential toxicity impacts on marine biota (e.g. death, injury).<br>Oiling of marine animals and coastlines.<br>Disturbance to marine fauna including mammals, birds, reptiles and other organisms (i.e. altered feeding, nursing, mating or migrating behaviour).<br>Visible pollution / reduction of visual amenity.<br>Disruption to other marine users such as commercial fishing and recreational users. | Low           |

#### 6.10.4 Environmental Control Measures

The following controls and mitigation measures have been adopted to ensure appropriate environmental management of vessels along the Offshore TGP route and to reduce environmental risks and impacts associated with vessel fuel storage to ALARP:

- **CM11:** Pre-start notifications
- **CM12:** Navigational Charts
- **CM13:** Vessels to adhere to the navigation safety requirements including the Navigation Act 2012 and any subsequent Marine Orders
- **CM27:** SOPEP (or equivalent)
- **CM35:** Navigational equipment
- **CM36:** OPEP
- **CM37:** OSMP
- **CM55:** Arrangements supporting the OPEP will be tested to ensure the OPEP can be implemented as planned

The environmental performance outcomes and environmental performance standards for the controls above are given in Appendix F.

#### 6.10.5 Assessment of ALARP

As stated in Section 2.2.2.2, adverse impacts on the shoreline or sensitive marine ecosystems in the event of a spill from Offshore TGP inspection and maintenance vessels are highly unlikely due to: the size of vessels used; properties of hydrocarbons that could potentially be spilled; expected maximum spill volumes; high energy marine environment of Bass Strait; and the distance from the Offshore TGP to sensitive receptors (e.g. islands / shorelines).

The potential risk is further reduced by the control measures listed above, and the infrequent nature, relatively small scale and short duration of Offshore TGP inspection and maintenance activities. Therefore, the environmental risk associated with fuel management is considered ALARP.

**Table 6-73: ALARP Decision Context and Justification**

| ALARP Decision Context | Justification  |
|------------------------|--|
| A                      | <p>Operating a vessel close to an offshore pipeline is common practice, that is well regulated with associated control measures and well understood locally, nationally and internationally.</p> <p>Vessel operations are infrequent (&lt;1 every 2 years) and of short duration (generally less than 4 weeks).</p> <p>During consultation with relevant persons, no objections or claims regarding impact on marine flora and fauna were made.</p> <p>TGPPL believes ALARP Decision Context A should apply.</p> |

**Table 6-74: Good Practice Controls**

| Good Practice                                   | Control   | Rationale  |
|---|---|--|
| Pre-start notifications                         | <b>CM11:</b> Pre-start notifications  | Under the Navigation Act, the AHS is responsible for maintaining and disseminating nautical information including: Notices to Mariners<br><br>AHS will be notified to allow for the generations of Notice to Mariners. |
| Mapping of the pipeline route                   | <b>CM12:</b> Navigational charts  | TGP and AMSA safety zones has been included on marine navigation charts.   |
| Adherence to navigation safety requirements     | <b>CM13:</b> Vessels to adhere to the navigation safety requirements including the Navigation Act 2012 and any subsequent Marine Orders | Marine Order 21, regulates vessel related activities and invokes controls for safety and emergency response, so as to not adversely impact others.   |
| Marine Order 30 (Prevention of Collisions) 2016 | <b>CM35:</b> Navigation equipment   | TGP will ensure vessel will comply with Marine Order 30, with regards to navigational equipment (including lighting and radar equipment) requirements.   |

| Good Practice                                  | Control  | Rationale  |
|--|--|--|
| Shipboard Oil Pollution Emergency Plan (SOPEP) | <b>CM27:</b> SOPEP (or equivalent)   | <p>MARPOL Annex I Regulations for the Prevention of Pollution by Oil specifically require that a SOPEP (or equivalent, according to class, i.e. SMPEP) is in place.</p> <p>To prepare for a spill event, the SOPEP details:</p> <ul style="list-style-type: none"> <li>• response equipment available to control a spill event</li> <li>• review cycle to ensure that the SOPEP is kept up to date</li> <li>• testing requirements, including the frequency and nature of these tests.</li> </ul> <p>In the event of a spill, the SOPEP details:</p> <ul style="list-style-type: none"> <li>• reporting requirements and a list of authorities to be contacted</li> <li>• activities to be undertaken to control the release</li> <li>• procedures for coordinating with local authorities.</li> </ul> |
| Oil spill response planning                    | <b>CM36:</b> OPEP<br><b>CM55:</b> Arrangements supporting the OPEP will be tested to ensure the OPEP can be implemented as planned | Under the OPGGS (Environment) Regulations, NOPSEMA require that an accepted OPEP and testing arrangements are in place before commencing petroleum activities. In the event a vessel collision occurs, the OPEP found in Section 9.4 will be implemented. The testing arrangements can be found in Table 9-2.  |
| Oil spill monitoring plan                      | <b>CM37:</b> OSMP  | <p>The OSMP (Section 9.4.11) details:</p> <ul style="list-style-type: none"> <li>• arrangements for monitoring a hydrocarbon spill</li> <li>• scientific monitoring of environmental impacts of a spill and the response activities.</li> </ul> <p>Operational monitoring will provide information to facilitate decision making and ensure responses are timely, safe and appropriate. Scientific monitoring will identify if potentially longer-term remediation activities are required.</p>  |

**Table 6-75: Engineering Risk Assessment**

| Additional, alternative control | Benefit                              | Cost/feasibility   | Adopted     |
|---------------------------------|--------------------------------------|--|-------------|
| Eliminate use of vessels        | Not considered, control not feasible | Not considered, control not feasible. The use of vessel is required to conduct IMR activities. | Not Adopted |

## 6.10.6 Demonstration of Acceptability

**Table 6-76: Demonstration of Acceptability Test**

| Factor                             | Demonstration criteria  | Rationale  |
|------------------------------------|---|--|
| Principles of ESD                  | No potential to affect biological diversity and ecological integrity.                           | The potential impacts associated with this aspect are considered localised and short-term. It is not considered to have the potential to affect biological diversity or ecological integrity.  |
|                                    | Activity does not have the potential to result in serious or irreversible environmental damage. | The activities were evaluated as having the potential to result in a Consequence Level - Minor. This is not considered to have the potential to result in serious or irreversible environmental damage.  |
| Legislative and other requirements | Legislative and other requirements have been identified and met.                                | <p>Proposed control measures meet the requirements for the following legislative instruments:</p> <ul style="list-style-type: none"> <li>• OPGGS Act, Section 280 requires that a person carrying on activities in an offshore area under the permit, lease, licence, authority or consent must carry on those activities in a manner that does not interfere with navigation or fishing (among others) to a greater extent necessary than for the exercise of the rights conferred by titles granted.</li> <li>• Navigation Act 2012 - Chapter 6 (Safety of Navigation) Part 6 deals with safe navigation including provisions about reporting of movement of vessels.</li> <li>• Protection of the Sea (Prevention of Pollution from Ships) Act 1983</li> <li>• Marine Orders 1 to 98 - Generally give effect to international obligations and standards and apply to regulated Australian vessels, foreign vessels, and some domestic commercial vessels</li> <li>• Marine Order 18 (Measures to enhance maritime safety) 2013 · Marine Order 27 (Safety of navigation and radio equipment) 2016</li> <li>• Marine Order 30 (Prevention of collisions) 2016 · Rule 10 of COLREGs</li> <li>• Environment Protection Act 2017 - Impacts from activities are considered to be localised and short-term. Adoption of the control measures listed in Section 6.10.4, will ensure compliance with the EP Act, Regulations and ERS.</li> </ul> |

| Factor                | Demonstration criteria  | Rationale   |
|-----------------------|---|---|
| Internal context      | Consistent with TGP Environment Policy Statement.   | Proposed activities are consistent with the TGP Environment Policy Statement, in particular “comply with all relevant legislation, regulations, codes of practice and standards” and “conducting all activities in a manner consistent with the principles of sustainable management and caring for the environment”. |
| External context      | Relevant person concerns have been considered/addressed through the consultation process. | No specific relevant person concerns have been raised concerning the introduction of invasive marine species.   |
| Acceptability outcome | <b>Acceptable</b>   |   |

## 6.11 Unplanned Hydrocarbon Release: Loss of Pipeline Integrity Management

Table 6-77: Impact/Risk Evaluation Summary

| Source of Impact/Risk   | Environmental Value Potentially Impacted |               |             |                     |         |                | Evaluation    |                 |             |              |               |
|---|--|---------------|-------------|---------------------|---------|----------------|---------------|-----------------|-------------|--------------|---------------|
|   | Seabed Sediment                          | Water Quality | Air Quality | Ecosystem / Habitat | Species | Socio-economic | Decision Type | Likelihood      | Consequence | Risk Ranking | Acceptability |
| Loss of pipeline integrity, dry gas release into the marine environment |  | ✓             |             | ✓                   | ✓       | ✓              | A             | Highly Unlikely | Minor       | Low          | Acceptable    |

### 6.11.1 Impact of Activities

There are no environmental impacts associated with the normal day to day operation of the Offshore TGP, as daily pipeline operations (i.e. continuous transport of gas) are completely internal to the pipeline.

However, loss of pipeline integrity could result in accidental release of gas from the Offshore TGP to the marine environment. Although highly unlikely, loss of subsea pipeline integrity could potentially result from:

- Physical damage (e.g. dropped objects, dropped / dragged anchors, grounding / sinking ships, dragged fishing equipment or intentional damage)
- Fatigue damage (free spans) due VIV or subsea currents / natural events (e.g. major storm or seismic activity)
- Internal corrosion of the pipeline

### 6.11.2 Identification of Environmental Risks

The key potential environmental impacts associated with a gas release from the Offshore TGP are:

- *Injury to, or death of, marine fauna in the immediate vicinity of the release*
- *Disturbance to marine fauna including mammals, reptiles and other organisms (i.e. altered feeding, nursing, mating or migrating behaviour)*
- *Scouring / physical damage to benthic communities*
- *Generation of a sediment plume in the water column, potentially leading to smothering of, or reduced light penetration to, benthic communities; and*
- *Temporary and localised change in water quality*

For further details of safety issues related to a subsea release of gas from the Offshore TGP (i.e. a flash fire or loss of vessel buoyancy) refer to the *TGP Offshore Safety Case (TGP-698-SC-HSE-004)*.

Loss of Containment (LOC) from the Offshore TGP would result in a significant pressure drop, which would be identified via the SCADA system. The TGP SCADA system utilises real time modelling via the ATMOS SIM plug-in for leak detection capability. This detects leaks through a volume flow imbalance algorithm which can also provide an estimate on the location of the leak. The system is configured to detect leaks at a range of potential flow rates typically seen on the TGP (TGPPL, 2022).

In the event of detection in pressure drop indicating an LOC event, the pipeline may be isolated by closure of the onshore MLVs. This will limit the volume of gas released. The maximum gas released from any point in the offshore pipeline is approximately 100 TJ (TGPPL, 2022).

Natural gas exhibits negligible solubility in water and hence, in event of a subsea gas leak, the impact on water quality is likely to be insignificant (Nord Stream, 2009). Due to the depth of the offshore pipeline along the most of the TGP route, any gas release is most likely to be gradual and evidenced by bubbles rising to the surface. Any explosive rupture would be buffered by the density of the water and would only affect the immediate vicinity of the pipeline. Impacts would therefore depend on the depth at which the failure occurred.

A short-term thermal impact (i.e. temperature drop due to the Joule-Thomson gas expansion effect) may occur in the surrounding water in the immediate vicinity of the subsea gas release. A subsea gas release could also potentially cause an updraft of bottom waters, resulting in sediment suspension in the water column. This could potentially lead to smothering of, and a short-term localised reduction in light penetration to, benthic flora and fauna. An updraft could also cause mixing of bottom and surface waters, potentially causing short-term changes to salinity, water temperature and dissolved oxygen (Nord Stream, 2009). However, as detailed in Sections 4.6, 6.2 and 6.3, there are no significant benthic communities in the vicinity of the Offshore TGP.

Modelling of a potential leak of gas as a result of a breach of the Offshore TGP was undertaken to determine the area that may be impacted. The potential gas leak scenarios modelled ranged from a hole of 5 mm to a full-bore rupture (Cardno, 2013). Due to its low molecular weight, any gas escape from the Offshore TGP is expected to rise rapidly through the water column to the sea surface where it will dissipate to atmosphere. For the purposes of the model, it was assumed that gas will rise from the seabed as bubbles and reach the sea surface in an area represented by a circle with a radius dependent on the water depth and the rate of leakage (TGPPL, 2022). With this initial source on the surface, standard atmospheric dispersion was used to compute the gas concentration in the atmosphere as a function of the distance downwind (Cardno, 2013). Results of the modelling indicated that:

- Concentration of gas in the plume above the sea surface will drop rapidly to below the Lower Explosive Limit (LEL) within 5 km of the source
- Sea level gas concentrations are very much lower and, due to the plume rise, are well below the required limit beyond about 100 m from the source

As part of the Offshore Safety Case, a formal safety assessment (FSA) was conducted to assess the potential of a major accident event (MAE) from a fire/explosion resulting from a pipeline rupture causing LOC and subsequent ignition of the released gas. It was evaluated that it would be extremely unlikely that a potential source of ignition would be present at the time of LOC. The risks associated with this MAE were thoroughly assessed and were determined to have been reduced to ALARP (TGPPL, 2022).

The environmental impacts of a subsea gas leak would largely be due to its physical presence as it passes through the water column and into the atmosphere. Some of this gas may dissolve in the water column but is not generally considered toxic to marine biota. The main potential impacts are only likely to occur from the extreme cases of explosion, flammability or asphyxiation where it may accumulate in sufficient quantities. The open marine environment of the Offshore TGP is extremely unlikely to lead to this condition.

Potential exposure of marine fauna to gas hydrocarbons from a subsea pipeline rupture would require the coincident occurrence of fauna, such as marine mammals or birds, within the area of a recent leak. Although some of the islands in the vicinity of the Offshore TGP route are known breeding colonies for seals and seabirds, there are no recognised aggregation areas for protected whales or dolphins within the area.

In the open water offshore environment, the nearest land mass is located 10 km from the Offshore TGP and is unlikely to be impacted by gas escape from a subsea pipeline rupture.

For a gas leak in a nearshore environment, adverse effects could involve potential hazards associated with concentration of gas in air near the LEL, however atmospheric conditions prevailing at the time, and presence of ignition sources, will determine if there is any impact to the environment.

### 6.11.3 ERA Summary

The risk assessment associated with pipeline integrity management is summarised in Table 6-78.

**Table 6-78: ERA Summary**

| Activity               | Potential incident / hazard   | Potential environmental impacts  | Residual risk |
|------------------------|---|--|---------------|
| Offshore TGP operation | Subsea gas release due to loss of pipeline integrity because of: <ul style="list-style-type: none"> <li>Physical damage (e.g. dropped objects, dropped / dragged anchors, sinking / grounding ships, dragged fishing equipment or intentional damage);</li> <li>Fatigue damage (free spans) due VIV or subsea currents / natural events (e.g. major storm or seismic activity);</li> <li>Internal corrosion of the pipeline.</li> </ul> | Injury to, or death of, marine fauna in the immediate vicinity of the release.   | Low           |
|                        |   | Disturbance to marine fauna including mammals, reptiles and other organisms (i.e. altered feeding, nursing, mating or migrating behaviour).  | Low           |
|                        |   | Scouring / physical damage to benthic communities; and generation of a sediment plume in the water column, potentially leading to smothering of, or reduced light penetration to, benthic communities. | Low           |
|                        |   | Temporary and localised change in water quality.   | Low           |

### 6.11.4 Environmental Control Measures

Measures to ensure the integrity of the Offshore TGP is maintained are fully discussed in the *TGP Offshore Safety Case* (TGP-698-SC-HSE-004). The prime means by which pipeline integrity is maintained lies in the original design of the Offshore TGP (TGP Offshore Safety Case) including the physical construction of the pipeline, which was devised to maintain the highest safety standards possible, and its selected route.

The following controls and mitigation measures have been adopted to ensure appropriate environmental management along the Offshore TGP route and to reduce environmental risks and impacts associated with pipeline integrity management to ALARP:

- **CM4:** No anchoring
- **CM5:** Vessel work procedures for lifts, bulk transfers and cargo loading
- **CM6:** Maintenance and repair procedures
- **CM9:** Cargo Securing Manual
- **CM12:** Navigational charts
- **CM36:** OPEP
- **CM37:** OSMP
- **CM55:** Arrangements supporting the OPEP will be tested to ensure the OPEP can be implemented as planned
- **CM38:** Accepted TGP Operations Safety Case in place
- **CM58:** Continuous monitoring of the pipeline
- **CM59:** Routine inspections of the subsea pipeline

The environmental performance outcomes and environmental performance standards for the controls above are given in Appendix F.

### 6.11.5 Assessment of ALARP

**Table 6-79: ALARP Decision Context and Justification**

| ALARP Decision Context | Justification  |
|------------------------|--|
| A                      | <p>Loss of offshore TGP integrity resulting in a subsea gas release is a potential, but extremely unlikely, risk. The potential risk is further reduced by the control measures listed in Section 6.11.4, particularly the pipeline design (material selection, wall thickness and concrete coating), route selection and continuous monitoring of the TGP through a SCADA system in the RMC. TGP has been externally inspected at regular intervals over the past 12 years and was internally inspected in 2010. No evidence exists that the integrity of the Offshore TGP is compromised and is currently at approximately half its 40-year design life. The Offshore TGP has also been designed to withstand a 1 in 100 storm event and any seismic activity expected in the Bass Strait region.</p> <p>The main potential impacts are only likely to occur in the extreme cases of explosion/flammability or asphyxiation. However, due to the open, high energy marine environment of Bass Strait, any gas cloud is expected to disperse rapidly and not accumulate. It must also be noted that there are no recognised aggregation areas for protected whales or dolphins within the area, and there are also no significant benthic communities within the vicinity of the Offshore TGP. Therefore, the environmental risk associated with loss of Offshore TGP integrity is considered extremely low and therefore ALARP.</p> <p>During consultation with relevant persons, no objections or claims regarding impact on marine flora and fauna were made.</p> <p>TGPPL believes ALARP Decision Context A should apply.</p> |

**Table 6-80: Good Practice Controls**

| Good Practice   | Control  | Rationale   |
|---|--|---|
| Implement a safety management system that controls risks from major incidents | <p><b>CM38:</b> Accepted TGP operations safety case in place</p> <p><b>CM58:</b> Continuous monitoring of the pipeline</p> <p><b>CM59:</b> Routine inspections of the subsea pipeline</p> <p><b>CM6:</b> Maintenance and repair procedures</p> | <p>Under the OPGGS (Safety) Regulations NOPSEMA requires the pipeline to have an accepted Safety Case in place before commencing activities.</p> <p>The Safety Case addresses the operation and maintenance of the TGP, including emergency preparedness and response.</p> <p>Continuous monitoring of the pipeline via the SCADA system will identify potential LOC incidents and enable to MLVs to be closed and pipeline depressured.</p> <p>Monitoring for damage and corrosion is also vital to ensuring pipeline integrity and where required, the pipeline will be repaired.</p> |
| Minimise the potential for dropped objects                                    | <p><b>CM5:</b> Vessel work procedures for lifts, bulk transfers and cargo loading</p> <p><b>CM9:</b> Cargo Securing Manual</p>   | <p>Procedures in place and implemented for lifting, cargo loading, bulk transfers, cargo securing to minimise the potential for objects to be dropped onto the pipeline and cause damage.</p>   |
| Emergency response plans in place   | <p><b>CM36:</b> OPEP</p> <p><b>CM37:</b> OSMP</p> <p><b>CM55:</b> Arrangements supporting the OPEP will be tested to ensure</p>  | <p>Emergency response plans in place and tested to ensure that the impacts of a spill are minimised.</p>  |

| Good Practice                                       | Control                                | Rationale  |
|---|--|--|
|   | the OPEP can be implemented as planned |  |
| Other marine users aware of the pipeline's presence | <b>CM12:</b> Navigational charts       | TGP and AMSA safety zones has been included on marine navigation charts. |

**Table 6-81: Engineering Risk Assessment**

| Additional, alternative control | Benefit | Cost/feasibility | Adopted |
|---------------------------------|---------|------------------|---------|
| N/A                             | N/A     | N/A              | N/A     |

### 6.11.6 Demonstration of Acceptability

**Table 6-82: Demonstration of Acceptability Test**

| Factor                             | Demonstration criteria  | Rationale   |
|------------------------------------|---|---|
| Principles of ESD                  | No potential to affect biological diversity and ecological integrity.                           | The potential impacts associated with this aspect are considered localised and short-term. It is not considered to have the potential to affect biological diversity or ecological integrity.   |
|                                    | Activity does not have the potential to result in serious or irreversible environmental damage. | The activities were evaluated as having the potential to result in a Consequence Level – Minor. This is not considered to have the potential to result in serious or irreversible environmental damage.   |
| Legislative and other requirements | Legislative and other requirements have been identified and met.                                | Operation of the pipeline aligns with the requirements of the OPGGS Act, Schedule 3 (Occupational Health and Safety) and the OPGGS (Safety) Regulations that require an operator to have an accepted Safety Case.   |
| Internal context                   | Consistent with TGP Environment Policy Statement.   | Proposed activities are consistent with the TGP Environment Policy Statement, in particular “comply with all relevant legislation, regulations, codes of practice and standards” and “conducting all activities in a manner consistent with the principles of sustainable management and caring for the environment”. |
| External context                   | Relevant person concerns have been considered/addressed through the consultation process.       | No specific relevant person concerns have been raised concerning the introduction of invasive marine species.   |
| Acceptability outcome              | <b>Acceptable</b>   |   |

## 7. Environmental Performance Outcomes, Standards and Measurement Criteria

The following section summarises the environmental performance outcomes, performance standards and measurement criteria that have been developed by TGPPL as part of a systematic approach to environmental risk management for the Offshore TGP.

Appendix F provides details of specific performance outcomes, performance standards and measurement criteria for Offshore TGP operation, inspection and maintenance activities. The performance outcomes, standards and measurement criteria are applicable to the whole offshore TGP pipeline, unless otherwise noted. TGPPL accepts and is committed to implementation of these environmental requirements. The performance outcomes, performance standards and documentation provided in Appendix F are used to assess TGPPL's overall environmental performance against stated environmental performance outcomes.

### 7.1 Environmental Performance Outcomes

As defined in NOPSEMA Guidance Note GN 1344, an environmental performance outcome is a measurable level of performance required for the management of environmental aspects of an activity to ensure that the environmental impacts and risks will be of an acceptable level. Environmental performance outcomes ensure that ongoing environmental performance will meet, or be better than, the acceptable levels defined in the Offshore EP.

Environmental performance outcomes set the level at which an incident becomes a 'recordable incident' (i.e. a breach of an environmental performance outcome) and are also used as a basis for environmental performance reporting required by Regulation 26C of the Offshore Petroleum and Greenhouse Storage (Environment) Regulations 2023.

The performance outcomes listed in Appendix F are directly linked to the identified hazards, risks, and impacts from the ERA (refer to Section 5) and the controls and mitigation measures implemented to reduce risks and impacts to ALARP (refer to Section 6). TGPPL will conduct audits of the performance standards and measurement criteria outlined in Appendix F, both prior to and during Offshore TGP inspection and maintenance activities to verify the responsibilities and commitments of this Offshore EP are carried out.

### 7.2 Performance Standards

In accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023, an environmental performance standard is a "statement of performance required of a control measure", which is a system, an item of equipment, a person or a procedure that is used as a basis for managing environmental impacts and risks for the duration of the activity. Performance standards are the parameters against which control measures are assessed to ensure that they consistently perform to reduce impact or risk to ALARP and to an acceptable level and are used to determine whether TGPPL is meeting its environmental performance outcomes.

It is acknowledged that a breach of an environmental performance outcome or performance standard constitutes a recordable incident, which must be reported in accordance with Section 8.6.4 of this Offshore EP.

Performance Standards related to Offshore TGP integrity and safety are provided in the *TGP Offshore Safety Case* (TGP-698-SC-HSE-004) and are also referenced in Section 6.11.4 above. The following Offshore Performance Standards have been developed by TGPPL to ensure the integrity of the Offshore TGP:

- *SCADA System / RMC* (TGP-698-ST-RA-001)
- *Mainline Valves MLV1 & MLV2* (TGP-698-ST-RA-002)
- *Subsea Pipeline Free Spans & Stability* (TGP-698-ST-RA-003)

- *Corrosion Protection* (TGP-698-ST-RA-004)
- *Subsea Pipeline Wall Thickness* (TGP-698-ST-RA-005)
- *Gas Quality* (TGP-698-ST-RA-006).

### 7.3 Measurement Criteria and Records

In accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023, Appendix F includes measurement criteria that have been developed by TGPPL to assess whether defined environmental performance outcomes and performance standards have been met.

Appendix F also includes reference to relevant documentation and records required to show whether performance standards for Offshore TGP operation, inspection and maintenance activities have been met.

## 8. IMPLEMENTATION STRATEGY FOR THE ENVIRONMENTAL PLAN

TGPPL, as facility operator of the TGP, has engaged experienced contractors to undertake inspection and maintenance activities along the Offshore TGP. TGPPL and its contractors are committed to responsible environmental management during TGP operations. Palisade Integrated Management Services (PIMS)/TGPPL has formalised this commitment in their Environment Policy (refer to Section 1.5).

All employees and contractors working on the TGP are required to work in line with these policies, their HSEMS and requirements of the TGP Offshore EP. All Offshore TGP activities will be conducted in accordance with the approved Offshore EP as well as relevant International, Commonwealth and State legislation, regulations, conventions and guidelines.

### 8.1 Introduction

TPG's implementation strategy for this EP has been developed to comply with the requirements of Regulation 14(1) of the OPGGS(E) Regulations and describes the specific measures and arrangements that will be implemented for the duration of the activity to ensure that:

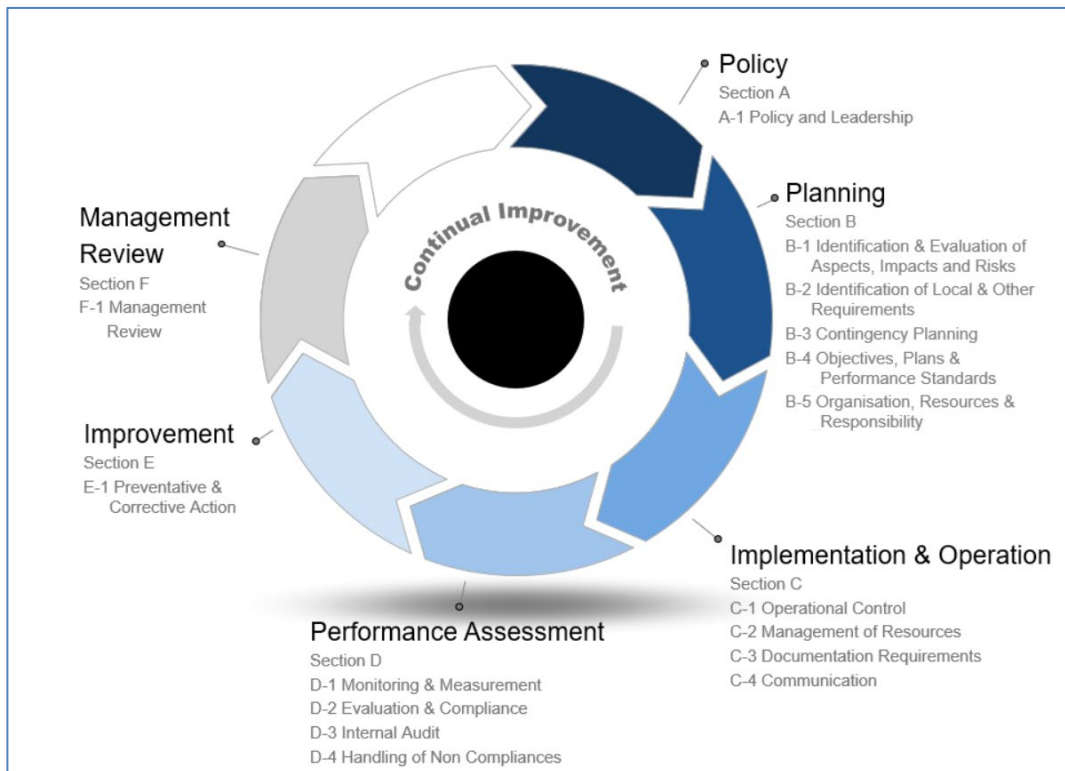
- All environmental impacts and risks of the activity will be continually identified and reduced to a level that is ALARP
- Control measures detailed in the EP are effective in reducing the environmental impacts and risks of the activity to ALARP and acceptable levels
- Environmental performance outcomes and standards set out in the EP are met
- Arrangements are in place to respond to, and monitor impacts of, oil pollution emergencies
- Relevant person consultation is maintained throughout the activity as appropriate

### 8.2 Safety Management System

The TGP Safety Management System (SMS) has been developed and maintained to meet the requirements of AS/NZS ISO 9001: 2008, AS/NZS ISO 14001: 2016 and AS/NZS 4801: 2001 and the applicable legislative and regulatory requirements. The following graphical representation shown in Figure 8-1 of the HSEMS includes the System Requirements and their respective Elements.

This framework provides a systematic approach that can both assist with meeting legislative compliance and lead to sustained improvement in HSE performance. This approach will be universally applied across all areas of operation of the TGP. The TGP SMS provides full integration across System Requirements, System Elements, Works Procedures and all other relevant documentation.

All TGP contractors must operate under the TGP SMS or have their own management system that is compatible with the TGP SMS.



**Figure 8-1 HSE Management System Framework**

### 8.2.1 Management of Change

The TGP *Change Management Plan* (TGP-698-PA-CM-001) details the process by which improvements or changes to plant, systems and documentation are controlled from initiation through to completion. Effective change management ensures continuous improvement within the business. The TGP Change Management Plan applies to all TGPPL assets, both onshore (in Victoria and Tasmania) and offshore in the Bass Strait and details relevant to the EP from the Change of Management Plant are detailed below.

Changes within TGPPL's business can occur in two ways:

- Change imposed on the business from external influences. These changes typically involve changes in legislative requirements or changes in the applicable codes and standards which govern the construction, operations and maintenance activities carried out on the TGP assets
- Changes instigated within the business. These changes typically involve modifications to the assets, modifications to the procedures used to construct, operate and maintain or abandon the asset or changes to the personnel and organizational structures imposed as a result of promotion of personnel, resignations or company restructures

Both internally instigated and externally imposed changes related to the TGP assets need to be managed effectively through the following key steps:

- Notification – either by an internal request for change or an external notification of change
- Assessment – use of a suitable risk assessment tool whereby the threats to the business are identified and control measures put in place, or modified, to mitigate the risks of that change to tolerable levels
- Communication – use of appropriate methods of information dissemination to get the results of the risk assessment to all areas of the business that are affected
- Implementation – the monitoring and review of the Action Plan emanating from the risk assessment to ensure that the actions required to mitigate the risks from the change are effectively carried out

- Documentation – ensuring that the change management process is well documented and that any management plans or procedures that are required to be revised as a result of the change are actioned in a timely manner and approved
- Close out – ensuring that the change management process is completely closed out
- More specifically, the TGP Change Management process will ensure that:
  - Change is a controlled process, fully documented and compliant with the relevant codes, standards and statutory requirements
  - The proposed improvements or changes are technically sound and commercially justifiable
  - All improvements or changes to TGP assets are assessed and approved by competent people
  - All hazards associated with the change are identified and managed to ensure that environmental impacts and risks are managed to ALARP and an acceptable level
  - All documentation, including drawings and procedures, that are affected as a result of the change are updated to reflect the implemented change
  - Operations and Maintenance Management Systems, Emergency Response Systems, Hazard Registers, Equipment Registers and other relevant documents are revised to reflect the change both within TGP and also where applicable within any service provider systems

The TGP Change Management Plan provides details of the following aspects:

- Changes requiring application of the Change Management process and those that do not
- Drawing Change Management
- Change Management Procedure:
  - Change initiation
  - Change Request Form
  - Registering the change
  - Implementation of change
  - Close-out
- Technical Queries; and
- Audit of the Change Management process

Section 8.5.5 addresses changes which would result in this EP being revised for resubmission.

### 8.3 Environmental Responsibilities

Overall responsibility for environmental management of the TGP rests with TGPPL. The General Manager TGPPL is responsible for implementation of this Offshore EP and conducting operational, inspection and maintenance activities in line with Offshore EP requirements; including coordination of contractors offshore.

External contractors are engaged for all Offshore TGP operations, inspection and maintenance activities. Contractor supervisors manage on the ground activities, with the TGPPL Asset Engineer providing direct environmental management support for Offshore TGP inspection, maintenance and operations.

As described previously in Section 1.2.1, the RMC is managed by Worley as shown also in Figure 1-1. The RMC reports to TGPPL for all environmental matters.

Environmental support is provided by the corporate HSE and technical compliance groups in TGPPL, as well as specialised environmental consultants engaged by TGPPL. All personnel are responsible for ensuring their work complies with this Offshore EP. Figure 1-1 shows the organisational

relationships and roles between all TGP parties. Specific Environmental Responsibilities are listed in Table 8-1.

All personnel associated with activities on the Offshore TGP are required to be aware of the environmental responsibilities described in this Offshore EP and all other requirements related to working on and around the Offshore TGP. The Offshore EP is included as part of all contractual documents for works on the Offshore TGP and all contractors are required to comply.

**Table 8-1: Environmental Responsibilities for TGPPL Roles and Contractors**

| Position Title                       | Environmental Responsibilities  |
|--------------------------------------|---|
| CEO TGPPL                            | Overall accountability for ensuring TGP is managed in accordance with the Offshore EP.  |
| General Manager TGPPL                | <p>Ensure the activity is undertaken as per the performance outcomes of the EP;<br/>Ensures that sufficient resources are provided for the implementation of the Offshore EP;</p> <p>Primary contact for all consultation with relevant persons related to environmental issues associated with the Offshore TGP;</p> <p>Management of emergency response for the Offshore TGP;</p> <p>Review the EP as necessary and manage change requests (as described in Section 8.2.1).</p>   |
| Engineering/Operations Manager TGPPL | <p>Maintenance of the Compliance Calendar;</p> <p>Maintenance of the TGP Offshore ERA/Environmental Aspects and Impacts Register;</p> <p>Management of the Incident Management System;</p> <p>Preparation of Training Plans based on training needs analysis for management, staff and contractors;</p> <p>Maintenance of all records that monitor performance and demonstration of compliance with TGP Offshore EP and other relevant TGP documentation;</p> <p>Maintenance of a schedule of compliance audits in accordance with the TGP Audit Management Plan (TGP-698-PA-AU-001). Ensure audits are documented, all corrective actions are implemented and review the effectiveness of corrective actions;</p> <p>Report environmental incidents in accordance with regulatory requirements;</p> <p>Responsible for implementation of the EP;</p> <p>Preparation, submission and revision of the EP with input by TGPPL staff and external consultants as required;</p> <p>Manages regulatory relationships and reports to regulatory authorities on environmental matters in accordance with legislative requirements;</p> <p>Coordinates offshore operations and maintenance activities;</p> <p>Manages relationships with contractors. Ensures environmental induction and training program is developed and implemented;</p> <p>Ensures requirements of the Offshore EP are undertaken by TGPPL personnel and contractors;</p> <p>Coordinates the environmental inspection and monitoring program;</p> <p>Monitors environmental performance against KPIs;</p> <p>Emergency Coordinator for the TGP;</p> <p>Ensure environmental incidents are reported and input to the Incident Management System;</p> <p>Contacts senior management and Palisade in the event of a major incident;</p> <p>Maintain liaison with Emergency Services as required;</p> <p>Ensure timely resolution of all environmental issues requiring corrective action as set out in work orders;</p> <p>Participate in emergency exercises and environmental risk assessments.</p> |

| Position Title                         | Environmental Responsibilities  |
|--|---|
| TGPPL Team, Melbourne                  | <p>Document control;</p> <p>Record management;</p> <p>Analysing results of major inspections and surveys to determine appropriate additional measures as required;</p> <p>Ensuring adherence to codes, standards and regulations;</p> <p>Monitoring activity on the pipeline by its contractors and providing technical guidance on day-to-day operations;</p> <p>Contributing to planning and providing support for emergency simulation training exercises;</p> <p>Engaging suitable competent and qualified personnel;</p> <p>Undertake audits to ensure Offshore EP compliance;</p> <p>Management of legislation monitoring.</p>  |
| Emergency Management Team (EMT), TGPPL | <p>Assist the General Manager TGPPL to develop and integrate the TGP Emergency Response Management Plan (ERMP); and</p> <p>Co-ordinate externally-provided emergency training and exercises.</p>  |
| Contractor Supervisor                  | <p>Implementation of the Offshore EP;</p> <p>Implement the TGP ERMP in the event of an emergency;</p> <p>Ensure monitoring is undertaken as per this EP;</p> <p>Orders STOP WORK for any environmental breaches and reports incident to General Manager TGPPL;</p> <p>Production of monthly reports for the General Manager TGPPL</p> <p>Reports to General Manager TGPPL on all environmental matters, including public complaints, any field-based non-compliance;</p> <p>Ensure contractor personnel receive environmental induction.</p>  |
| RMC Manager, Worley                    | <p>Implementation of the Offshore EP;</p> <p>Manage RMC activities;</p> <p>Ensure environmental responsibilities and due diligence are met;</p> <p>Ensure responsibilities in relation to Offshore EP requirements are adequately resourced;</p> <p>Provide environmental management induction to personnel.</p>  |
| Vessel Master (contractor)             | <p>Overall responsibility for HSE management aboard the vessel;</p> <p>Ensure safe execution for all operations of the vessel;</p> <p>Ensure vessel operations are being conducted in accordance with the legislative requirements and this EP, including waste management and emergency/oil spill response;</p> <p>Ensure vessel audits, inspections, emergency drills, training and inductions are undertaken;</p> <p>Communicates hazards and risks to the workforce and the importance of following good work practices.</p> <p>Maintains the site / vessel in a state of preparedness for emergency response.</p> <p>Implement the vessel's SOPEP in the event of an oil spill, including first response to an incident using the resources immediately available to the vessel;</p> <p>Immediately notify the Contractor Supervisor of any incidents/activities arising from vessel operations that are likely to have a negative impact on the performance outcomes detailed in this EP;</p> <p>Reports environmental incidents within the operational area to the Contractor Supervisor;</p> <p>Establish and maintain radio contact with other vessels in the operational area and adjacent waters;</p> <p>Notify AMSA and the General Manager TGPPL in the event of a notifiable oil spill.</p> |

| Position Title   | Environmental Responsibilities   |
|--|--|
| Offshore operations / maintenance personnel or contractors | Assist with inspection and maintenance of the Offshore TGP;<br>Adhere to the requirements of the Offshore EP;<br>Undertake Offshore TGP inspection / maintenance activities in accordance with procedures;<br>Participate in environmental induction and emergency response exercises;<br>Report environmental incidents to Vessel Master and TGPPL Asset Engineer in a timely manner commensurate with the severity of incident and regulatory requirements;<br>Participate in risk assessment programs in their designated area of responsibility. |

## 8.4 Environmental Training and Communication

Personnel directly involved in TGP operations are required to be familiar with Offshore EP requirements and their statutory / regulatory obligations. Effective environmental training and communication is achieved through:

- Competency checks
- Environmental Induction and Job Specific Training
- SCADA system
- Risk assessment workshops
- Electronically including via the Intranet, in newsletters and on noticeboards

### 8.4.1 Competency of Personnel

All Offshore TGP works are to be undertaken by suitably qualified and competent persons.

Almost all the works undertaken on the Offshore TGP are performed by contractors.

Due to the wide range of possible works and skills required, training and competency requirements will typically be defined in scopes of works and contractors required to submit these to TGP. As part of the contracting process, TGPPL undertakes assessments of the proposed contractor's environmental management system and its ability to meet the requirements of this EP. This assessment is undertaken as part of the pre-mobilisation process. This assessment determines where there is a clearly defined organisational structure, with defined roles and responsibilities for key positions.

As a minimum, environmental awareness during inductions is required for all vessel personnel, detailing awareness and compliance with the Vessel contractor's environment policy and environmental management system.

Skills and aptitudes that are assessed as part of the qualification process include:

- Awareness and knowledge of the existence and requirements of the relevant regulations
- Experience in similar operations
- Familiarity with good industry practice for each of the activities
- Technical competency to approve and monitor the application of engineering solutions during the conduct of the operation

Employee selection, induction, competencies, training requirements, performance review, and training records for TGPPL personnel are managed through PIMS system. Contractors working on the TGP (onshore and offshore) are required to have their own systems demonstrating their personnel have the required competencies to undertake their roles in a safe and efficient manner.

### 8.4.2 Environmental Induction Training

Each TGP team member, including contractors, must undergo a TGP Induction prior to, or on commencement of, work. Offshore activity specific inductions are given prior to commencement of work campaigns.

This includes an induction to all relevant TGPPL systems and procedures including the Offshore EP, and a field induction covering conditions for operation and maintenance including environment management. The Induction has a particular reference to regulatory requirements and emergency response.

TGPPL will direct all employees and contractors to follow all permit conditions, environmental regulations and to meet the commitments made in this Offshore EP.

All TGPPL personnel and contractors involved in offshore inspection and maintenance campaigns will undergo environmental awareness training prior to the activities commencing as part of their induction.

The environmental awareness component of the induction will include the following:

- Environmental regulatory requirements
- Description of the environmental sensitivities and conservation values of the operational area and surrounding waters
- TGPPL's Environment Policy
- EP importance, structure, implementation and roles and responsibilities of key positions.
- Main environmental aspects/hazards and potential environmental impacts and related performance outcomes.
- Overview of the waste management requirements
- Overview of housekeeping and spill prevention
- Procedures for reporting reportable and recordable environmental incidents
- Overview of emergency response and spill management procedures
- No fishing from the vessels
- Underwater Cultural Heritage Identification procedure and reporting requirements

It is the responsibility of the Contractor Supervisor to ensure that all personnel receive this induction prior to the commencement of inspection and maintenance campaign activities. All induction attendees will sign an attendance sheet to confirm their participation in, and understanding of, the induction which is retained in accordance with the TGP *Records Management Plan* (TGP-698-PA-DM-001).

### 8.4.3 Activity Specific Environmental Awareness

Before petroleum activities begin, a pre-activity meeting will be held on-board Project Vessels or at USV control centre with all relevant personnel. The pre-activity meeting provides an opportunity to reiterate specific environmental sensitivities or commitments associated with the activity. Attendance lists are recorded and retained.

During operations, regular HSE meetings (which cover all crew) will be held on the Vessels or with the USV personnel. During these meetings, recent environmental incidents are reviewed, and awareness material presented.

## 8.5 Performance Monitoring and Review

The General Manager TGPPL is responsible for maintaining all records that monitor performance and demonstrate compliance with the requirements of the TGP Offshore EP and other relevant TGP documentation.

TGPPL's operations, systems and processes are monitored and, where required, measured to ensure the effectiveness of the TGP Offshore EP and compliance with relevant legal and other requirements.

Details of specific reporting requirements with respect to environmental performance are provided in Section 8.6.

### 8.5.1 Monitoring of Legislation

TGPPL is required to identify changes to codes and standards, review applicable procedures and ensure the knowledge is transferred to the relevant areas. The TGPPL Engineering/Operations Manager is responsible for ensuring that this monitoring occurs.

TGPPL regularly reviews legislation (Acts and Regulations) to ensure that TGP policies, plans and procedures are current and legally compliant. TGPPL is also responsible for maintaining legislative compliance knowledge in the business. These functions are achieved by:

- Subscribing to Standards Australia and appropriate legislative change alert service
- Assigning responsibilities for monitoring changes to standards, codes and legislation
- Ensuring that changes are communicated to all parts of the business in an effective manner
- Regular reviews of critical legislation, codes and standards; and
- Participation on industry and government committees and workshops on proposed changes
- Assigning actions related to legislation or standards to the Compliance Management System (currently Maintenance Connection)

Compliance requirements are listed in Appendix A, with periodic requirements captured in compliance management system and assigned to the appropriate personnel. Upon the receipt of a notification of a change in legislation relevant to the business, the change management procedure is followed in accordance with the TGP *Change Management Plan* (TGP-698-PA-CM-001). This includes a risk assessment process which may result in the addition of compliance measures to the Compliance Plan.

Changes to legislation are to be communicated to all relevant TGPPL personnel and contractors.

### 8.5.2 Regulatory Audits

Regulatory audits will be conducted as required by regulatory authorities. Generally, this is anticipated to be annually by NOPSEMA. All regulatory audit schedules are subject to change based on the requirement of the authority and the occurrence of environmental incidents.

### 8.5.3 Audits, Assessments and Inspections

Environmental performance assurance of the TGP operations activities will be undertaken in a number of ways. Performance assurance is undertaken to ensure that:

- Controls are implemented in accordance with EPSs to achieve the EPOs
- Non-compliances and opportunities for improvement are identified
- Environmental monitoring and reporting requirements are met

#### 8.5.3.1 Support Vessel Activities

A due-diligence pre-activity inspection/audit of support vessels will be carried out prior to inspection and maintenance work commencing (after contract award) to verify that procedures and equipment for managing routine discharges and emissions are in place (as described in pre-qualification material) to enable compliance with the TGP Offshore EP. This includes the relevant IMS inspections as detailed in Section 6.9.4.

### 8.5.3.2 Compliance Audits – Implementation Strategies

TGPPL will conduct audits of TGP performance outcomes, standards and measurement criteria outlined in Appendix F during Offshore TGP inspection and maintenance activities (and as scheduled for all other activities) to verify the responsibilities and commitments of this TGP Offshore EP are carried out.

TGPPL will ensure that:

- All activities are managed in accordance with the TGP Environmental Policy and relevant TGPPL procedures
- All activities comply with regulatory requirements
- Vessels carry all relevant certificates, procedures, logs, training records and equipment as outlined in this TGP Offshore EP
- All maintenance and repair activities are carried out consistent with Maintenance schedules and Work programs
- Vessel Emergency Response Plans (ERPs) are current and all emergency drills have been undertaken and recorded
- All personnel are aware of their environmental obligations and have received appropriate inductions and training; and
- All reporting requirements and schedules are met with adequate records kept

### 8.5.3.3 Compliance Audits – Environmental Plan

The General Manager TGPPL maintains a schedule of compliance audits for the Offshore TGP in accordance with the TGP *Audit Management Plan* (TGP-698-PA-AU-001). Compliance audits of this Offshore EP are to be completed annually or when offshore activities are undertaken to ensure that it continues to conform to relevant legislative requirements. The TGP Audit Management Plan outlines the requirements for compliance audits.

The TGP Audit Management Plan covers all the activities involved in the maintenance and operation of the onshore and offshore sections of the TGP and describes the types of audits and the activities and resources necessary for planning, organising and conducting audits. The Audit Management Plan lists the types of audits and the specific activities and resources required to conduct the audits effectively and efficiently within the specified timeframes for the program, and describes the methodology to be used in conducting audits.

The General Manager TGPPL has ultimate responsibility for the TGP Audit Management Plan. The General Manager TGPPL will ensure the establishment, implementation, monitoring, review and improvement of the AMP every 12 months and ensure that the resources necessary to conduct the Audit Program are identified and provided. The General Manager TGPPL is also responsible for:

- Ensuring Offshore EP compliance audits are scheduled and performed
- Undertaking the ERAs as required
- Ensuring the results of audits are fully documented and maintained
- Ensuring that corrective actions are implemented for any non-compliances/non-conformances identified
- Reviewing the effectiveness of the corrective actions once completed

Copies of the results of these compliance audits will be made available to the appropriate regulatory authorities upon request.

The work that contractors perform to maintain the Offshore TGP will be audited in line with the TGP Audit Management Plan to ensure appropriate standards are met on routine and project works. This is anticipated to be on an annual basis. In addition, each major inspection and maintenance contractor will be visited at least annually for an end-to-end audit of their management systems and

processes. Where shortfalls exist, corrective action requests will be raised and the close out of these items will be monitored through contractor management meetings.

For further details regarding TGP audits and the management of associated non-conformances, recommendations/corrective and preventative actions, refer to the *TGP Offshore Safety Case* (TGP-698-SC-HSE-004).

#### 8.5.4 Monitoring of Emissions and Discharges

Table 8-2 provides a summary of the environmental monitoring requirements. The Contractor Supervisor is responsible for ensuring the monitoring is undertaken as per this EP.

**Table 8-2: Environmental Monitoring and Reporting**

| Aspect   | Criteria   | Reporting   |
|--|--|---|
| Accidental release of solid or hazardous waste                 | Waste type, volume   | Incident report<br>Annual Environmental Performance Report  |
| Accidental release of hydraulic fluid or other liquid chemical | Chemical type, volume  | Incident report<br>Annual Environmental Performance Report  |
| Accidental fuel spill  | Volume   | Incident report<br>Annual Environmental Performance Report  |
| Anchoring  | Occurrence   | Incident Report<br>Annual Environmental Performance Report  |
| Unrecovered dropped object                                     | Object type, location  | Incident report<br>Annual Environmental Performance Report  |
| Interactions with marine fauna                                 | Interaction type, management actions taken, if any, and reason for no action                                       | If incident breaches relevant EPO or EPS - incident report<br>Annual Environmental Performance Report |
| Oily water (bilge) discharge                                   | Volume, compliance with MARPOL (oil-in-water concentration, vessel moving or stationary)                           | If incident breaches relevant EPO or EPS - incident report<br>Annual Environmental Performance Report |
| Putrescible waste discharge                                    | Volume, compliance with MARPOL (macerated or unmacerated, vessel moving or stationary, distance from nearest land) | If incident breaches relevant EPO or EPS - incident report<br>Annual Environmental Performance Report |
| Sewage discharge   | Volume, compliance with MARPOL (treated or untreated, vessel moving or stationary, distance from nearest land)     | If incident breaches relevant EPO or EPS - incident report<br>Annual Environmental Performance Report |
| Ballast water uptake / discharge                               | Exchanged volume, distance from nearest land   | If incident breaches relevant EPO or EPS - incident report<br>Annual Environmental Performance Report |

| Aspect         | Criteria     | Reporting                               |
|----------------|--------------|---|
| Waste to shore | Type, volume | Annual Environmental Performance Report |

### 8.5.5 Review of the Offshore Environmental Plan

The Offshore EP shall be reviewed and resubmitted for approval by the Regulatory Authority (NOPSEMA) in the following circumstances:

- Every five (5) years from the date of last acceptance, as required under Section 19 of the Commonwealth Offshore Petroleum and Greenhouse Gas Storage Regulations (Environment) 2023
- In the event a significant new or increased environmental risk is identified
- In the event there is a change or proposed change in circumstances or operations that results in a significant additional or modified risk not provided for in the existing EP (refer to Section 8.2.1 Management of Change process)
- When requested by NOPSEMA, Earth Resources Regulator (Victoria) or Mineral Resources Tasmania

Other examples of changes that may require the Offshore EP to be revised and resubmitted include:

- Change in permit title holder or operator in relation to an activity
- Significant change in timing or location
- Introduction of a new stage of an existing activity, new facilities or activities or modification of existing facilities or activities that fall outside the accepted EP; and
- Following an event which highlights that environmental impacts or risks of an activity are greater than those predicted and agreed to in the accepted EP (e.g. chemical spill)
- New relevant persons raise new issues which after evaluation have the potential to significantly increase the risk of interference with the relevant person interests beyond that addressed in the accepted EP

The EP revision shall include a re-evaluation of the ERA, environmental performance outcomes and implementation strategy.

Where an EP is revised it shall be submitted to NOPSEMA, Earth Resources Regulator (Victoria) and Mineral Resources Tasmania for assessment.

## 8.6 Environmental Reporting

### 8.6.1 Internal Reporting

Regular contact is maintained between TGPPL and its contractors while offshore activities are being undertaken. Contractors are required to provide TGPPL with regular reports on their operations including environmental incidents reported, environmental issues identified, and environmental issues rectified.

All reports are kept in accordance with the TGP *Records Management Plan* (TGP-698-PA-DM-002).

### 8.6.2 Reporting to Regulatory Authorities

Regular contact will be maintained between TGPPL and Regulatory Authorities, with meetings held and reports prepared as required. A report shall be submitted by TGPPL to NOPSEMA on an annual basis to describe environmental performance of the Offshore TGP in accordance with the Offshore EP. The report shall provide sufficient information on the monitoring program to enable authorities

to determine if the Offshore TGP environmental performance outcomes and standards have been met, and shall include:

- Description of inspection and maintenance activities completed and those planned within the next reporting period
- Outcomes of inspection and maintenance activities completed
- Performance against environmental performance outcomes and standards identified in the Offshore EP
- A summary and analysis of non-conformances and corrective action requests where they relate to the Offshore EP
- A summary and analysis of reportable and recordable environmental incidents occurring within the report period (refer to Sections 8.6.4 to 8.6.5)
- Trends in emissions and discharges
- A summary of complaints received from the public and any actions taken to rectify the identified issues
- Findings of any internal compliance audits conducted during the reporting period
- A summary of any environmental studies associated with the facility, technical improvements, consultation undertaken and any other relevant environmental information; and
- Opportunities for future improvements

An annual report is also submitted to the Tasmanian Department of State Growth (Mineral Resources Tasmania (MRT)) and Victorian Department of Energy, the Environment and Climate Action - Resources Victoria, Regulatory Operations (DEECA).

In addition to environmental performance reporting, OPGGS (Environment) Regulations 54 requires notifying NOPSEMA of the start and end of an activity and Regulation 46 requires notifications that all of the obligations under the EP have been completed.

Where applicable, TGPPL is responsible for submitting an emissions report to the National Pollutant Inventory (NPI), a section of the Commonwealth Department of Climate Change, Energy, Environment and Water (DCCEEW). This occurs annually if the defined thresholds for any of the 93 listed NPI substances are exceeded.

Table 8-3 lists the reporting requirements for this EP.

### 8.6.3 Environmental Incident Reporting

'Incidents' are defined as unplanned events with undesirable consequences. The consequences of such incidents may result in environmental damage or asset loss.

If an environmental incident occurs with the potential for serious environmental harm, all personnel will take all reasonable actions to minimise any adverse environmental impacts. All environmental incidents shall be recorded and managed according to the TGP *Incident Reporting and Investigation Procedure* (TGP-698-PR-HSE-002).

All environmental incidents and near misses associated with Offshore TGP activities must be reported to the General Manager TGPPL, including:

- All loss of containment or releases of liquids, solid, or gas
- Any dangerous goods or hazardous substance spills (any volume or weight)
- Complaints by relevant persons
- Regulatory Breaches – Fines, Prosecutions, Improvement Notices, Breaches of licence conditions
- Property damage or loss
- Loss or damage to marine flora or fauna of significance

Reporting shall occur as soon as possible after the incident has occurred to ensure that TGPPL and its contractors meet their regulatory obligations. In some cases, reporting to the Regulatory Authority is required within 2 hours of the incident (refer to Table 8-3). The General Manager TGPPL shall ultimately determine whether the incident should be reported to the regulatory authorities.

Information recorded for all Offshore TGP incidents shall include:

- Initial Report & Notification detailing facts about the incident  
The classification of the incident including 'environment', 'injury / illness', 'damage (property / equipment, etc.)'  
For environmental incidents, the type of environmental impact including water, air, land, noise, flora / fauna, cultural heritage or waste management
- Whether the incident relates to a contaminant spill or release
- Specific details and sources if relating to fires
- Risk assessment based on TGP risk matrix
- Whether the incident resulted in Regulatory Non-compliance
- Whether the incident resulted in security breaches
- Investigation of the incident
- Actions for resolution

All Offshore TGP incidents are to be reported immediately and recorded on the *TGP Incident Report Form* (TGP-698-FM-EM-001). An incident involving a contractor or service provider undertaking work on TGPPL's behalf must be reported to TGPPL immediately and may be recorded on a contractor incident report form, if approved by TGPPL.

The completed *TGP Incident Report Form*, is sent to the General Manager TGPPL, or suitably qualified delegate, who will decide whether the incident is reportable or not. Environmental incidents requiring reporting to regulatory authorities and other government agencies are outlined in Section 8.6.5.

#### 8.6.4 Recordable Environmental Incidents

A recordable incident is any breach of an environmental performance outcome or performance standard identified in this TGP Offshore EP, that is not a reportable incident. Performance outcomes and performance standards are listed in Appendix F of Section 7, as part of the Implementation Strategy for the Offshore EP.

Monthly reports of recordable incidents are submitted to NOPSEMA, DEECA and MRT at the end of each calendar month and contain details of:

- All recordable incidents that occurred during the month
- The material facts and circumstances relating to recordable incidents that the operator knows of or is able, by reasonable search and enquiry to find out
- Any action taken to avoid or mitigate any adverse environmental impacts of the incident; and
- The corrective / preventative action that has been taken, or is proposed to be taken, to prevent similar incidents

#### 8.6.5 Reportable Environmental Incidents

Reportable environmental incidents are those that:

- have caused moderate to significant environmental damage; or
- have the potential to cause moderate to significant environmental damage

This includes but is not limited to those identified through the risk assessment as having a consequence ranking of I or II, or at a minimum the following incidents:

- An uncontrolled release of hydrocarbons or hazardous chemicals >80 L to the environment
- An uncontrollable gaseous release to atmosphere of >300 kg; and
- Disturbance to a particular sensitivity associated with an activity, e.g. injury or death of a species of conservation value or damage to habitat of importance to those species

Commonwealth and State regulatory requirements for reporting environmental incidents are summarised in Table 8-3. Reports to all Regulatory Authorities shall, as a minimum, cover the following:

- All material facts and circumstances concerning the incident that the operator knows of, or is able, by reasonable research or enquiry, to find out
- Any action taken to avoid or mitigate any adverse environmental impacts of the incident; and
- The corrective / preventative action that has been taken, or is proposed to be taken, to prevent similar incidents

**Table 8-3: Environmental Reporting Obligations**

| Legislation  | Reference     | Obligation  | Regulatory Authority | Frequency  |
|--|---------------|---|----------------------|--|
| <b>Commonwealth</b>  |               |   |                      |  |
| <i>Environment Protection and Biodiversity Conservation Act 1999</i>     | Section 199   | <b>Notify</b> - Death or injury to listed threatened species or listed ecological community | DCCEEW               | Notify the secretary within 7 days of becoming aware of the action, by telephone or by any other electronic equipment.   |
|  | Section 214   | <b>Notify</b> - Death or injury to listed migratory species                                 |                      |  |
|  | Section 256   | <b>Notify</b> - Death or injury to marine wildlife  |                      |  |
| -  | -             | <b>Notify</b> - Cetacean vessel strike  | DCCEEW               | Within 3 days  |
| Offshore Petroleum and Greenhouse Storage (Environment) Regulations 2023 | Regulation 47 | <b>Notify</b> - Reportable environmental incidents  | NOPSEMA              | <p>NOPSEMA must be notified of all reportable environmental incidents as soon as practicable, but no later than 2 hours after the incident occurs or 2 hours after the operator becomes aware of the incident.</p> <p>The operator must, as soon as practicable, but not later than 3 days after the occurrence of a reportable environmental incident, submit a written report to NOPSEMA.</p> <p>Ph: (08)6461 7090</p> <p>Email: <a href="mailto:submissions@nopsema.gov.au">submissions@nopsema.gov.au</a></p> <p>The written incident report must also be provided to the National Offshore Petroleum Titles Authority (NOPTA).</p> <p>Email: <a href="mailto:info@nopta.gov.au">info@nopta.gov.au</a></p> <p><a href="#">Report of an incident, dangerous occurrence or environmental incident form</a></p> |
|  | Regulation 48 | <b>Report</b> - Reportable environmental incidents  |                      |  |
|  | Regulation 50 | <b>Report</b> - monthly reporting of recordable incidents                                   |                      |  |
|  | Regulation 51 | <b>Report</b> - annual EP environmental performance   | NOPSEMA              | <p>Annually summarise any campaign activities and environmental performance as measured against the EP. Where no campaign activities have occurred a report will be submitted stating 'no activity in that last 12 months'.</p> <p>Email: <a href="mailto:submissions@nopsema.gov.au">submissions@nopsema.gov.au</a></p>   |

| Legislation  | Reference  | Obligation  | Regulatory Authority | Frequency   |
|--|--|---|----------------------|---|
|  | Regulation 54  | <b>Report</b> – commencement date of campaign activities  | NOPSEMA              | At least 10 days prior to the commencement of the activity.<br><u>Regulation 54 – Notification of start or end of an activity form</u><br>Email: <a href="mailto:submissions@nopsema.gov.au">submissions@nopsema.gov.au</a> |
|  | Regulation 54  | <b>Report</b> – end date of campaign activities   | NOPSEMA              | Within 10 days of completion of the activity.<br><u>Regulation 54 – Notification of start or end of an activity form</u><br>Email: <a href="mailto:submissions@nopsema.gov.au">submissions@nopsema.gov.au</a>               |
|  | Regulation 46  | <b>Report</b> – completion of EP  | NOPSEMA              | Within 10 days of activity finalisation and obligation completion.<br>Email: <a href="mailto:submissions@nopsema.gov.au">submissions@nopsema.gov.au</a>   |
|  | Regulation 41  | <b>Submit</b> – Revised Offshore Environment Plan (EP)  | NOPSEMA              | Every 5 years   |
| <i>Protection of the Sea (Prevention of Pollution by Ships) Act 1983</i> | -  | <b>Notify</b> – Oil spill only  | AMSA                 | AMSA must be notified within 1 hour.<br>Ph: 1800 641 792<br>Email: <a href="mailto:mdo@amsa.gov.au">mdo@amsa.gov.au</a>   |
| <i>Navigation Act 2012</i>   | Marine Order 91 (Marine pollution prevention – oil) 2014<br>Marine Order 93 (Marine pollution prevention – noxious liquid substances) 2014<br>Marine Order 94 (Marine pollution prevention – packaged harmful substances) 2009 | <b>Notify</b> - Vessel Master to notify AMSA about a pollution incident involving: <ul style="list-style-type: none"> <li>a discharge (or probable discharge) of oil or noxious liquid substances in excess of permitted MARPOL discharge levels, quantities or rates, for whatever reason, including those for the purpose of securing the safety of the ship or for saving life at sea</li> <li>a discharge (or probable discharge) of harmful substances in packaged form, including those in freight containers, portable tanks, road and rail vehicles and shipborne barges.</li> </ul> <b>Report</b> - If AMSA asks for a written MARPOL report. Report to include: <ul style="list-style-type: none"> <li>name of ship/s involved</li> <li>time, type and location of incident</li> <li>quantity and type of harmful substance</li> <li>assistance and salvage measures</li> <li>any other relevant information</li> </ul> | AMSA                 | Verbally without delay. If requested a written report must be provided within 24 hours after AMSA asks for the report.  |

| Legislation  | Reference     | Obligation   | Regulatory Authority | Frequency  |
|--|---------------|--|----------------------|--|
| -  | -             | <p><b>Notify</b> – Any observed suspected/known Marine Pests to be provided to DCCEEW and relevant state authorities (see below sections) with the following information.</p> <ul style="list-style-type: none"> <li>• Date and time</li> <li>• Species details (if known), including number sighted</li> <li>• Location, GPS coordinates if possible</li> <li>• Habitat type</li> <li>• Water depth</li> <li>• Photographs, including close-up and from different angles with reference item such as coin, bank note or ruler (if available)</li> </ul> | DAFF                 | <p>As soon as practicable.<br/>Report a pest: as per <a href="http://www.marinepests.gov.au">www.marinepests.gov.au</a> website.</p> <p>For Commonwealth;<br/>Email: <a href="mailto:ccimpe@aff.gov.au">ccimpe@aff.gov.au</a><br/>Website: <a href="https://www.marinepests.gov.au/pests/identify">https://www.marinepests.gov.au/pests/identify</a></p>   |
| <b>Victoria</b>  |               |  |                      |  |
| Offshore Petroleum and Greenhouse Storage Regulations 2021 | Regulation 22 | <b>Submit</b> – Revised Offshore Environment Plan (EP)   | DEECA                | Every 5 years  |
|  | Regulation 29 | <b>Notify</b> – Reportable environmental incidents   | DEECA                | <p>DEECA must be notified of all reportable environmental incidents as soon as practicable, but no later than 2 hours after the incident occurs or 2 hours after the operator becomes aware of the incident.</p> <p>The operator must, as soon as practicable, but not later than 3 days after the occurrence of a reportable environmental incident, submit a written report to DEECA.</p> <p>Earth Resources Regulation Duty Officer: 0419 597 010<br/>Email: <a href="mailto:ERRChiefInspector@deeca.vic.gov.au">ERRChiefInspector@deeca.vic.gov.au</a></p> |
|  | Regulation 30 | <b>Report</b> – Reportable environmental incidents   |                      |  |
|  | Regulation 31 | <b>Report</b> – monthly reporting of recordable incidents  | DEECA                | End of each calendar month   |
|  | Regulation 19 | <b>Report</b> – annual EP environmental performance  | DEECA                | <p>Within 28 days after the end of the financial year.</p> <p>The report must contain details of:</p> <ul style="list-style-type: none"> <li>• the petroleum operation activities (if any); and</li> <li>• conclusions derived from petroleum exploration activities; and</li> <li>• reports and studies relating to those activities; and</li> <li>• details of the expenditure by the permit holder on each activity undertaken during the year; and</li> </ul>  |

| Legislation  | Reference   | Obligation  | Regulatory Authority                        | Frequency  |
|--|---|---|---|--|
|  |   |   |   | <ul style="list-style-type: none"> <li>the date the report was completed; and</li> <li>the name of the person who prepared the report.</li> </ul>  |
|  | Regulation 19   | <b>Report</b> – completion of EP  | DEECA                                       | <p>Within 28 days after permit ceases to have effect.<br/>The report must contain details of:</p> <ul style="list-style-type: none"> <li>the petroleum operation activities (if any); and</li> <li>conclusions derived from petroleum exploration activities; and</li> <li>reports and studies relating to those activities; and</li> <li>details of the expenditure by the permit holder on each activity undertaken during the year; and</li> <li>the date the report was completed; and</li> <li>the name of the person who prepared the report.</li> </ul> |
| <i>Marine (Drug, Alcohol and Pollution Control) Act 1988</i> | Victorian Marine Pollution Contingency Plan           | <b>Notify</b> – Incident that causes or may cause environmental harm (Level 1 maritime sourced pollution incident)      | Gippsland Ports Committee of Management Inc | <p>As soon as practicable on:<br/>Ph: 03 5150 0500 or 0408 185 591<br/>Email: feedback@gippslandports.vic.gov.au</p>   |
|  | Maritime Emergencies (Non-Search and Rescue) Sub-Plan | <b>Notify</b> – Incident that causes or may cause environmental harm (Level 2 or 3 maritime sourced pollution incident) | DEECA/DTP                                   | <p>Notify DTP SREC as soon as possible by phone followed by an email.<br/>Ph: 0409 858 715<br/>Email: semdincidentroom@ecodev.vic.gov.au</p>   |
| <i>Marine and Coastal Act 2018</i>                           | Section 65(1)   | Obtain consent to undertake non IMR activities on marine and coastal crown land   | DEECA                                       | 6-months prior to commencing construction, decommissioning or other works that may disturb the seabed, contact DEECA on 136 186 to discuss the requirements and obtain the consent application form.   |
| -  | -   | <b>Notify</b> – Oiled wildlife  | DEECA                                       | Immediately  |
| <i>Wildlife (Marine Mammal) Regulations 2019</i>             | Part 3(9)   | <b>Notify</b> – Stranded, entangled, sick or injured whales or dolphins   | DEECA                                       | <p>As soon as practicable.<br/>Contact DEECA:<br/>Whale &amp; Dolphin Emergency Hotline - 1300 136 017; or<br/>Marine Response Unit – 1300 245 678.</p>  |
| <i>Wildlife (Marine Mammal) Regulations 2019</i>             | Part 3(9)   | <b>Notify</b> – Stranded, entangled, sick or injured seals or penguins  | DEECA                                       | <p>As soon as practicable.<br/>Contact DEECA on:<br/>Customer Service Centre – 136 186</p>   |

| Legislation  | Reference  | Obligation  | Regulatory Authority       | Frequency   |
|--|--|---|----------------------------|---|
| -  | Report a pest (as per <a href="http://marinepests.gov.au">marinepests.gov.au</a> website): | <p><b>Notify</b> – Suspected or known introduction of IMS.</p> <p>Contact authority with the as much of the following information as possible.</p> <ul style="list-style-type: none"> <li>• Date and time</li> <li>• Species details (if known), including number sighted</li> <li>• Location, GPS coordinates if possible</li> <li>• Habitat type</li> <li>• Water depth</li> <li>• Photographs, including close-up and from different angles with reference item such as coin, bank note or ruler (if available)</li> </ul> | DEECA                      | <p>As soon as practicable.</p> <p>Contact DEECA on:</p> <p>Phone - 1300 502 656</p> <p>Email - <a href="mailto:marine.pests@agriculture.vic.gov.au">marine.pests@agriculture.vic.gov.au</a></p> <p>Online reporting – Complete online form <a href="https://agriculture.vic.gov.au/biosecurity/marine-pests/report-a-marine-pest-sighting">https://agriculture.vic.gov.au/biosecurity/marine-pests/report-a-marine-pest-sighting</a></p> <p>Webpage - <a href="http://www.vic.gov.au/marine-pests">http://www.vic.gov.au/marine-pests</a></p> |
| <b>Tasmania</b>  |  |   |                            |   |
| <i>Environmental Management and Pollution Control Act 1994</i>           | Schedule 3   | <b>Report</b> – Incident causing threatening environmental nuisance or serious or material environmental harm from pollution  | Director, EPA Tasmania     | By phone as soon as reasonably practicable, but not later than 24 hours. By hand or by fax, not later than 24 hours.  |
|  | Section 32(3)  | <b>Notify</b> – Incident that causes or may cause environmental harm  | Director, EPA Tasmania     | By phone as soon as reasonably practicable, but not later than 24 hours. By hand or by fax, not later than 24 hours.<br>Report the incident directly to EPA's Hotline: 1800 005 171.  |
| Petroleum (Submerged Lands) (Management of Environment) Regulations 2012 | Regulation 25  | <b>Revise and Submit</b> – Environmental Management Plan  | MRT                        | Every 5 years   |
|  | Regulation 32<br>Regulation 33   | <b>Report</b> – environmental incidents   | MRT                        | MRT must be notified of all reportable environmental incidents as soon as practicable, but no later than 2 hours after the incident occurs or 2 hours after the operator becomes aware of the incident.<br>The operator must, as soon as practicable, but not later than 3 days after the occurrence of a reportable environmental incident, submit a written report to MRT.  |
|  | Regulation 34  | <b>Report</b> – monthly reporting of recordable incidents   | MRT                        | End of each calendar month  |
| -  | -  | <b>Notify</b> – Wildlife emergency  | Parks and Wildlife Service | Immediately   |

| Legislation | Reference  | Obligation   | Regulatory Authority   | Frequency   |
|-------------|--|--|--|---|
|             |  | <b>Notify</b> – Sightings or standings of whales, sick or injured seals, penguins, or other seabirds   | Department of Natural Resources and Environment (NRE) Tasmania | As soon as practicable.<br>Contact Whale Hotline:<br>Phone – 0427 942 537   |
| -           | Report a pest (as per <a href="http://marinepests.gov.au">marinepests.gov.au</a> website): | <b>Notify</b> – Suspected or known introduction of IMS.<br>Contact authority with the as much of the following information as possible. <ul style="list-style-type: none"> <li>• Date and time</li> <li>• Species details (if known), including number sighted</li> <li>• Location, GPS coordinates if possible</li> <li>• Habitat type</li> <li>• Water depth</li> <li>• Photographs, including close-up and from different angles with reference item such as coin, bank note or ruler (if available)</li> </ul> | Department of Natural Resources and Environment (NRE) Tasmania | As soon as practicable.<br>Contact NRE Tasmania on:<br>Phone – 03 6165 3777 or 1300 368 550<br>Email - <a href="mailto:invasivespecies@nre.tas.gov.au">invasivespecies@nre.tas.gov.au</a> or <a href="mailto:biosecurity.tasmania@nre.tas.gov.au">biosecurity.tasmania@nre.tas.gov.au</a><br>Online reporting – Complete online form <a href="https://nre.tas.gov.au/biosecurity-tasmania/contact-us">https://nre.tas.gov.au/biosecurity-tasmania/contact-us</a><br>Webpage - <a href="https://nre.tas.gov.au/biosecurity-tasmania/aquatic-pests-and-diseases">https://nre.tas.gov.au/biosecurity-tasmania/aquatic-pests-and-diseases</a> |

### 8.6.6 Complaints Procedure

In the event of an environment-related complaint from the public regarding noise, waste, air emission or a general pipeline operational issue, the Contractor Supervisor should notify the General Manager TGPPL, who will document responses and actions to manage the complaint. However, it must be noted that public complaints related to the Offshore TGP and associated inspection and maintenance activities are highly unlikely since it is a subsea pipeline located at water depths of up to 80 m.

If required, the General Manager TGPPL will contact the relevant authorities in accordance with statutory/regulatory requirements.

### 8.6.7 Corrective / Preventative Actions

Any corrective/preventative actions resulting from environmental incidents, audits, monitoring or site inspections will be documented using the TGP Incident Management System. When an environmental incident occurs or personnel identify a potential incident, an improvement request is raised, and appropriate controls and corrective/preventative actions are developed and implemented to resolve any issues.

All incidents and associated corrective/preventative actions are recorded and maintained by the General Manager TGPPL and communicated to all relevant TGP personnel.

### 8.6.8 Incident Investigation and Corrective Actions

The General Manager TGPPL is responsible for the initial reporting of significant non-compliances with this Offshore EP or relevant legislation to TGPPL senior management and to the relevant regulatory authorities in accordance with legislative requirements.

The Contractor Supervisor is responsible for reporting any field based non-compliances to the General Manager TGPPL.

The General Manager TGPPL is the primary contact for government environmental agency officers regarding environmental issues. Other environmental responsibilities are described in Section 8.3.

### 8.6.9 Underwater Cultural Heritage Identification

With all activities occurring within 200m of the TGP pipeline the likelihood of encountering underwater cultural heritage is low. However, given the cultural value of such artifacts, in the event of discovering any items that appears to be underwater cultural heritage (defined as 'any trace of human existence that has a cultural, historical or archaeological character and is located under water'), the following process will apply:

- All activities with the potential to impact the suspected Underwater Cultural Heritage must cease immediately. Retain all records of the potential Underwater Cultural Heritage including any imagery, description and location.
- Person who discovers the heritage object must inform the Activity Supervisor.
- Activity Supervisor must notify TGPPL General Manager.
- TGPPL will specify an appropriate buffer around the potential Underwater Cultural Heritage, taking into consideration the nature and scale of the potential Underwater Cultural Heritage and the activities to be managed.
- No seabed disturbance may occur within the buffer area around the potential Underwater Cultural Heritage until approved by TGPPL's General Manager.
- TGPPL's General Manager must notify a qualified maritime archaeologist and provide all available documentation of the potential Underwater Cultural Heritage.
- If the potential Underwater Cultural Heritage appears to be Aboriginal Underwater Cultural Heritage, TGPPL's General Manager must notify the appropriate Traditional Custodians to determine whether it is a heritage site and if so, how the site should be managed.

- If the potential Underwater Cultural Heritage appears to be a shipwreck or aircraft that has been wrecked for more than 75 years, or is of heritage significance or is otherwise reportable under section 40 of the *Underwater Cultural Heritage Act 2018*, TGPPL's General Manager must notify the Minister responsible for the *Underwater Cultural Heritage Act 2018*, the DCCEEW underwater archaeological section, the Australasian Underwater Cultural Heritage Database (administered by DCCEEW).
- If the suspected heritage object includes human remains, TGPPL's General Manager must also notify:
  - the Australian Federal Police (phone: 131 444) of the location of the remains, that the remains are likely to be historic or Aboriginal in origin, and that it may be appropriate that Traditional Custodians and a maritime archaeologist are present during any handling of the remains; and
  - the Office of the Federal Environment Minister in accordance with Section 20 of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*.

Work must not recommence in the vicinity of the heritage object until TGPPL's General Manager provides written approval. TGPPL's General Manager must only provide written approval once agreed management measures are implemented consistent with approvals and legislation or where the potential Underwater Cultural Heritage is confirmed to not be Underwater Cultural Heritage.

## 8.7 Environmental Records and Document Control

### 8.7.1 Records

Retention of records is an integral part of environmental management of the Offshore TGP, as evidence of compliance with applicable legislation and Offshore EP requirements. All environmental management documentation is securely stored and managed according to the *TGP Records Management Plan* (TGP-698-PA-DM-001).

In accordance with relevant regulations, documents to be stored shall include, but not be limited to:

- The Environment Plan (EP) in force for the activity
- Revisions of the EP
  - Written reports (including inspection, monitoring, audit and review reports) about environmental performance or about the implementation strategy under the EP
  - Records of calibration and equipment maintenance used in accordance with the EP
- Records and copies of report relating to reportable incidents and recordable incidents (refer to Section 8.6).
- Corrective action reports
- Environmental induction records
- Emission and discharge reports
- Waste log forms

All records shall be stored and retained for specific periods as outlined in the *TGP Records Management Plan* (TGP-698-PA-DM-001). This plan provides guidance on what information requires collecting and storing and timelines. Generally, legislation requires an operator to store and maintain records for a minimum period of 5 years.

### 8.7.2 Document Control

All TGP documents, including design, construction, commissioning and operational documentation, are securely stored in electronic format on a Document Management System (DMS), which is available to TGP personnel via a secure login only. TGP documents are managed in accordance with the *TGP Records Management Plan* (TGP-698-PA-DM-001).

All TGP documents are controlled within the TGP DMS to ensure that only the latest versions of documents are always available to TGP personnel. Printed or downloaded copies of TGP documents are deemed to be uncontrolled.

The TGPPL Engineering Manager is responsible for administration of the TGP DMS. The Document Controller is responsible for ensuring that the document management processes for TGP documents and records are applied. Hard copy records are also stored offsite at a Recall facility, with registers and catalogues available for each box in storage. Offsite records can generally be retrieved within 24 hours.

Hard copy manuals containing specific drawings and procedures are also located in the RMC, Zinfra field offices and at each Onshore station. All field staff are responsible for ensuring the hard copy manual is kept up-to-date with latest versions of drawings and procedures.

## 9. EMERGENCY PREPAREDNESS AND RESPONSE

### 9.1 Overview

The overall responsibility for management of emergency response for the Offshore TGP lies with the General Manager TGPPL. The General Manager TGPPL is accountable for ensuring that TGP emergency response arrangements are developed and implemented to facilitate coordinated and timely responses and ensure that risks associated with possible emergencies are reduced to be ALARP. Accordingly, TGPPL maintains an *Emergency Response Management Plan (ERMP)* (TGP-698-PA-EM-001), which outlines TGPPL's response management procedures in the event of emergencies occurring during the operation, inspection and maintenance of the TGP.

All major emergencies are coordinated primarily through the General Manager TGPPL. The General Manager TGPPL, or the manager's delegate, is accountable for leading the Emergency Response Team (ERT). At all times, adequate numbers of key personnel are available to respond to an emergency and to minimise its effects on personnel, the community, the environment, customers and the TGP.

In the event of an emergency, TGPPL will institute an emergency response structure as described in the TGP ERMP and subordinate documentation, as well as involving key TGPPL staff and managers in their relevant areas of expertise and roles.

Responsibility for Offshore TGP emergency field response lies with TGPPL. TGPPL may enlist the support of Zinfra if required, particularly in the event that isolation of the offshore section is required. If instructed to do so by TGPPL, Zinfra will close the MLVs through the RMC.

Details of the emergency response organisational structures are documented in the TGP *Emergency Response Management Plan* (TGP-698-PA-EM-001) and the accompanying TGP *Emergency Response Action Plan* (TGP-698-PA-EM-003). These emergency response documents are outlined below.

Where the incident is deemed to be, or has the potential to escalate to, a crisis level then senior executives within TGPPL and PIMS will be engaged as part of the Crisis Management Team (CMT).

### 9.2 Emergency Management Documentation

A comprehensive suite of emergency management documentation is in place which describes emergency management protocols and provides alignment between TGPPL, Zinfra and key contractors and relevant persons. The documents address high level strategic issues through to field based tactical response methods. The primary documents related to emergency response for the TGP are listed below:

TGP *Emergency Response Management Plan* (TGP-698-PA-EM-001) (ERMP) is the overarching emergency response document comprising:

- Incident escalation and notification structure
- Emergency response – command and control structure
- Roles and responsibilities
- Details of support facilities; and
- Contact details

The ERMP is supported by a suite of subordinate plans and procedures related to TGP emergency management, including:

- *TGP Offshore Emergency Response Action Plan* (TGP-698-PA-EM-003)
- *Offshore Oil Pollution Emergency Plan* (OPEP) (Section 9.4 of this EP)
- *Offshore Repair Manual* (TGP-600-PA-EM-002)
- *Storage and Maintenance Plan for Offshore Repair Equipment* (TGP-600-PA-EM-006)

In the event of an emergency, the relevant emergency response documents are to be actioned and the General Manager TGPPL immediately notified.

For further details of emergency response documents related to the Offshore TGP, refer to the *TGP Offshore Safety Case* (TGP-698-SC-HSE-004).

### 9.3 Emergency Response Training

Appropriate training will be made available to specific personnel required to undertake a role in oil spill response. Personnel working on the TGP participate in regular training exercises that cover emergency response and pipeline isolation procedures, repair procedures and equipment mobilisation. All new staff receive emergency response induction training. At a minimum, TGP conducts the following training in emergency preparedness:

- Annual exercises (which cover onshore and/or offshore scenarios) that are designed and controlled by TGPPL.
- Ad hoc exercises to coincide with specific offshore activities.

Personnel with an oil spill response role will undertake appropriate incident management training, as defined by their role and in accordance with the roles' training plan. Emergency exercises undertaken around the time of offshore activities will consider scenarios related to the activity, including oil spill responses. Records of emergency exercises are maintained in accordance with the Records Management Plan.

For further details regarding emergency response training related to the Offshore TGP, refer to the *TGP Offshore Safety Case* (TGP-698-SC-HSE-004).

### 9.4 Oil Pollution Emergency Plan (OPEP)

The development of an Oil Pollution Emergency Plan (OPEP) is required by Regulation 22(8) of the OPGGS(E) Regulations 2023.

This OPEP comprises relevant components of the inspection and maintenance vessel's SOPEP and the National Plan for Maritime Environmental Emergencies (NATPLAN) (AMSA, 2020). Once contracting has been finalised, the SOPEP for the vessel selected for the inspection and maintenance activity will be incorporated into the OPEP arrangements for this EP. The vessel's SOPEP and response arrangements will be tested prior to the commencement of the inspection and maintenance activities, and in line with Section 9.4.8.

NATPLAN applies to all spills from vessels in Commonwealth waters. The SOPEP recognises the divisions of responsibility to provide effective response to marine pollution incidents, as defined under NATPLAN. The SOPEP is the principal response document that will be implemented in the event of a marine oil spill, which provides specifics and provision for guiding management response to mitigate oil spills from vessels. Examples of emergency procedures that are defined in SOPEPs include steps to control:

- Collision
- Hull damage
- Tank failure
- Vapour release
- Fire and explosion
- Bunkering spills
- Sinking

### 9.4.1 First Point of Contact Following a Spill

Under existing Commonwealth and State Intergovernmental Agreements, authorities have been nominated with statutory and control responsibility for incidents within harbours, State waters and Commonwealth waters around Australia.

While TGP remains accountable for spills relating to its petroleum operations, the nominated Control Agency will vary depending on source, size and location of the spill. State agencies such as the Victorian Department of Transport and Planning (DTP), or the Tasmanian Environment Protection Authority (EPA) under the management of the Tasmanian Emergency Management (TEM), may assume Incident Control in state waters under the following circumstances:

- The incident is greater than a Level 1 spill in state waters and requires immediate escalation.
- The incident occurred in Commonwealth waters but has impacted on State waters.
- The Control Agency has requested State assistance.
- The State believes that TGP is not implementing an appropriate response to the incident.

#### 9.4.1.1 AMSA

In the event of a hydrocarbon release, the first point of contact is the Australian Maritime Safety Authority (AMSA) Rescue Co-ordination Centre. Contact details are listed in Table 9-1.

Relay the key known facts about the spill – location, source, size and type – as well as incident factors causing the spill, and current assessed spill level.

If the spill is in State waters, or likely to move into State waters, the spill must be reported using the contact details below. If the spill occurs outside port jurisdictions, relevant port authorities will be notified as defined in the relevant State response plan.

#### 9.4.1.2 Victoria

Control Agency: In the case of a **Level 1** release within the Gippsland Ports jurisdiction (state waters from SE point of Wilson's Promontory to New South Wales Border), Gippsland Ports Committee of Management Inc will be the Control Agency. Contact details are listed in Table 9-1.

Wherever possible the following information should be provided with the report, including any photographs of the incident:

- name and contact details
- where and when the pollution occurred
- the type of discharge or a description of the pollutant
- the extent or size of the area where the pollution is visible
- the source of pollution including vessel registration numbers if known.

Control Agency: For a **Level 2 or 3 spill**, or where a spill originates in Commonwealth waters and is likely to enter State waters (and where AMSA hand over Control Agency role), the Department of Transport and Planning (DTP), Safety Resilience and Emergency Coordination (SREC) will be the Control Agency. Any emergency notifications, including POLREPS and SITREPS to the state should go to the DTP. Contact details are listed in Table 9-1.

#### 9.4.1.3 Tasmania

Control Agency: In the case of a **Level 1, 2 or 3 spill**, or where a spill originates in Commonwealth waters and is likely to enter State waters (and where AMSA hand over Control Agency role), the Tasmanian Environment Protection Authority (EPA) Tasmanian Marine Pollution Controller (TMPC) will be the Control Agency. Contact details are listed in Table 9-1.

The initial verbal notification must be followed up by an email containing a more detailed Pollution Incident Report.

#### 9.4.1.4 Marine Parks

In the event of an oil or gas pollution incident that has either occurred within a marine park or is likely to impact upon a marine park, the Director of National Parks (DNP) should be notified through the following process.

Notification should be provided to the 24-hour Marine Compliance Duty Officer, refer to Table 9-1.

The notification should include:

- a) Titleholder details
- b) Time and location of the incident (including name of marine park likely to be effected)
- c) Proposed response arrangements as per the Oil Pollution Emergency Plan (e.g. dispersant, containment, etc.)
- d) Confirmation of providing access to relevant monitoring and evaluation reports when available
- e) Contact details for the response coordinator

When requested, the DNP may require daily or weekly Situation reports – this will depend on the scale and severity of the pollution incident.

#### 9.4.2 NATPLAN

NATPLAN is the framework that integrates Commonwealth and State Government(s) response, facilitating an effective response to marine pollution incidents via Australian Emergency Management Arrangements. AMSA manages NATPLAN and is the Control Agency for vessel spills in Commonwealth waters. As such, AMSA works with State Governments, emergency services and relevant industries (shipping, oil and gas, exploration and chemical industries) to maximise Australia's response capability.

NATPLAN applies to Commonwealth waters seaward of the boundary of State Waters (3 NM offshore) and integrates with State response plans. NATPLAN identifies a number of the roles that are fulfilled by State agencies as defined in the relevant State contingency plan:

- Jurisdictional Authority (JA): a statutory responsibility required to ensure that an adequate spill response plan has been prepared. In the event of a spill, the JA also ensures that a satisfactory response can be implemented by the Control Agency. In Commonwealth waters, the JA for petroleum activities is NOPSEMA, and AMSA for vessel spills (not associated with petroleum activities)
- Control Agency (CA): is responsible for operational control and response to an oil spill in the marine environment. The Commonwealth waters CA for Offshore TGP inspection and maintenance vessels is AMSA. AMSA may request that State CAs assume the lead CA role, even where the spill has occurred in Commonwealth waters (but where there is a likelihood that spilled hydrocarbons may impact State resources/shorelines)

National Plan response equipment and resources are managed and controlled by AMSA's Marine Environment Protection (MEP) Division, and include:

- Maritime Emergency Response Commander (MERCOT)
- Oil spill response equipment managed via the Marine Oil Spill Equipment System (MOSES)
- Oil Spill Response Atlas (OSRA) which identified sensitive receptors (e.g. marine and shoreline ecosystems and biological resources)
- Oil Spill Trajectory Modelling (OSTM)

#### 9.4.3 State Waters

If a hydrocarbon release occurs in State waters (or if it is likely to move into State waters), the following relevant State oil spill contingency plans will apply:

- The Victoria State plan is the Victorian State Emergencies Plan (Emergency Management Victoria, 2024), the relevant information for maritime is provided in the State Maritime Emergencies (Non-search and Rescue) Sub-Plan Edition 3 (Department of Transport and Planning, 2024) and the Victorian Joint Industry and State Oil Pollution Response Guidance Note (Revision 3, 2025). The State Jurisdictional Authority (JA) and Control Agency (CA) is Department of Transport and Planning (DTP), Safety Resilience and Emergency Coordination (SREC).
- The Tasmania State plan is the Tasmanian Marine Oil Spill Contingency Plan (TasPlan) (DPIPWE, 2022), this document supports the National Plan for Maritime Environmental Emergencies (NatPlan) and the Tasmanian Emergency Management Arrangements (TEMA). The State JA is the Department of Natural Resources (NRE) Tasmania, and the State CA is the Tasmanian Environment Protection Authority (EPA) Tasmanian Marine Pollution Controller (TMPC) (EPA Tasmania, 2018)

The deployment of State resources in Commonwealth waters will be requested and coordinated by AMSA.

#### 9.4.4 Emergency Contact Directory

**Table 9-1: External Emergency Contacts (Current as of November 2025)**

| Organisation                           | Function                   | Phone                        | Email  |
|--|----------------------------|------------------------------|--|
| Regulatory and Other External Contacts |                            |                              |  |
| AMSA                                   | Rescue Coordination Centre | 1800 641 792<br>02 6230 6811 | <a href="mailto:rccaus@amsa.gov.au">rccaus@amsa.gov.au</a>   |
| DCCEEW                                 | General                    | 1800 803 772                 |  |
| DNP                                    | Compliance Duty Officer    | 0419 293 465<br>0409 858 715 | <a href="mailto:sendincidentroom@ecodev.vic.gov.au">sendincidentroom@ecodev.vic.gov.au</a>         |
| Tas EPA                                | General                    | 1300 372 842                 | <a href="mailto:contact@epa.tas.gov.au">contact@epa.tas.gov.au</a>                                 |
|  | Incident Response          | 1800 005 171<br>03 6165 4599 | <a href="mailto:incidentresponse@epa.tas.gov.au">incidentresponse@epa.tas.gov.au</a>               |
|  | Whale Hotline              | 0427 942 537                 |  |
| Tas NRET                               | Wildlife Incidents         | 03 6165 4305                 |  |
| Vic DTP                                | Operational Duty Officer   | 1800 961 311                 | <a href="mailto:Operational.response@transport.vic.gov">Operational.response@transport.vic.gov</a> |
| Vic DEECA                              | Emergency Hotline          | 1800 226 226                 |  |
|  | Customer Service Centre    | 136 186                      |  |
| Vic DEEC Resources Victoria            |                            | 1300 240 308                 | <a href="mailto:errchiefinspector@deeca.vic.gov.au">errchiefinspector@deeca.vic.gov.au</a>         |

| Organisation                                    | Function                      | Phone                        | Email  |
|---|-------------------------------|------------------------------|--|
| Vic Gippsland Port Committee of Management Inc. | Duty Officer                  | 03 5150 0500<br>0408 185 591 | <a href="mailto:feedback@gippslandports.vic.gov.au">feedback@gippslandports.vic.gov.au</a>   |
| <b>Responder Contacts</b>                       |                               |                              |  |
| AMOSC   | Spill Response – Duty Officer | 0438 379 328                 |  |
| 360 Aviation Group                              | Aviation services             | 1300 360 334<br>0418 530 030 | <a href="mailto:enquiries@360AG.com.au">enquiries@360AG.com.au</a>   |
| Bhagwan Marine                                  | Vessel Hire                   | 03 7019 3300                 | <a href="mailto:vicoperations@bhagwanmarine.com">vicoperations@bhagwanmarine.com</a><br><a href="mailto:commercial@bhagwanmarine.com">commercial@bhagwanmarine.com</a> |
| RPS   | Oil spill modelling           | 07 5553 6900                 | <a href="mailto:jeremy.fitzpatrick@rpsconsulting.com">jeremy.fitzpatrick@rpsconsulting.com</a>   |
|   | OSMP Implementation           | 08 9211 1111                 |  |

#### 9.4.5 Roles and Responsibilities

AMSA is the Control Agency and hence responsible for managing response to all oil spills in Commonwealth waters under NATPLAN. Both MARPOL and the vessel's SOPEP require the vessel master to report to the nearest State whenever there is an incident involving actual or probably discharge. The vessel SOPEP is implemented to initiate clean up resources and control discharges.

The following roles will also provide key support:

- The Vessel Master will be responsible for notifications and reporting all spills to the sea to the AMSA JRCC, via a POLREP form included in the vessel SOPEP. Further reports will be sent at regular intervals to inform relevant persons and agencies (AMSA, NOPSEMA, TGPPL, inspection and maintenance contractors, etc.)
- The TGPPL representative on board the vessel (where applicable) is responsible for reporting directly to TGPPL. The General Manager TGPPL is then responsible for notifying NOPSEMA of any spills in Commonwealth waters

AMSA will appoint the MERCOM, who is supported by statutory powers under the Protection of the Sea (Powers of Intervention) Act 1981. The responsibilities of the MERCOM include the management of emergency intervention issues during a response to maritime casualty incidents where there is a real (or even potential) risk of significant pollution.

AMSA do not require title holders to consult on EPs for offshore petroleum activities and have produced an advisory note. As of 2021, AMSA will no longer be entering into any direct agreements with Titleholders for support with oil spill preparedness and response into the future. AMSA will continue to fulfil its obligations under the National Plan for Maritime Environmental Emergencies for non-ship source pollution incidents on the formal request from the respective Offshore Petroleum Incident Controller(s).

## 9.4.6 Assessment of Spill Scenarios

The level of hydrocarbon release is used to identify the level of resources required to respond to the spill. This approach allows scaling of response in line with the evolving nature and scale of the incident. Incident classification (Levels 1 to 3) is defined in NATPLAN as follows:

- **Level 1** incidents with a release of 0 to 10 m<sup>3</sup>, and where sensitive species or habitats are not at risk. These incidents are generally resolved through a First Strike response (i.e. local or initial resources only).
- **Level 2** (10 to 1000 m<sup>3</sup>) incidents may require deployment of jurisdictional resources supplementary to the initial response due to the more complex size/duration/resource management/risks involved. A Level 1 release may be escalated to a Level 2 where sensitive environmental/socio-economic receptors may be at risk.
- **Level 3** incidents (>1,000 m<sup>3</sup>) may require national and international resources, and where the incident controller must delegate all management functions and focus on strategic leadership and response coordination. A Level 2 release may be escalated to a Level 3 where sensitive environmental/socio-economic receptors may be at risk.

The following spill scenarios have been identified in Section 2.2.2.2 as being applicable to TGP offshore activities:

- **Level 1** (<100 L): Minor hydraulic oil spills (from an ROV /AUV).
- **Level 2** (40,000 L (approx. 40 m<sup>3</sup>) MDO): Complete loss of inventory from the largest fuel tank of the largest anticipated inspection and maintenance vessel resulting from collision or grounding.

### 9.4.6.1 Environment that May Be Affected (EMBA)

The Environment that May Be Affected (EMBA) is the sea surface area, water column, seabed and any relevant shorelines that could be impacted by oil spilled from a petroleum activity.

The EMBA for a Level 1 minor hydraulic oil spill incident is expected to be limited to the immediate vicinity of the release point due to rapid spreading, evaporation and dilution of the spilled hydraulic oil and the actions taken under the vessel SOPEP.

The EMBA for a Level 2 spill is based on the outcomes of the spill modelling for 40m<sup>3</sup> fuel spill (see Figure 2-12 in Section 2.2.2.2.2 for further details).

### 9.4.6.2 Protection Priorities Within the EMBA

The NATPLAN protection priority hierarchy has been used to define protection priorities and response objectives within the EMBA:

| Priority Level    | Description   |
|-------------------|---|
| <b>PRIORITY 1</b> | <b>Protection of human health and safety</b><br>- remove marine users and any potential casualties from areas considered to be a safety hazard                                      |
| <b>PRIORITY 2</b> | <b>Protection of habitat and cultural resources</b>   |
| <b>PRIORITY 3</b> | <b>Protection of rare and/or endangered fauna</b><br>- prevention of oil exposure to threatened fauna that are or may be present in (or in close proximity to) the operational area |
| <b>PRIORITY 4</b> | <b>Protection of commercial resources</b><br>- prevent exposure to commercial fisheries in (or in close proximity to) the operational area.   |

## 9.4.7 Spill Response Preparedness

Prior to commencement of inspection and maintenance activities:

- the Vessel Master will ensure that all relevant personnel have
  - undergone relevant inductions
  - are familiar with the SOPEP (and oil spill response arrangements therein)
  - are appropriately trained to undertake their responsibilities under the SOPEP
- the General Manager TGPPL and Vessel Master will ensure that notifications have been made to relevant persons and agencies

#### 9.4.8 OPEP Testing Arrangements

In accordance with OPGGS (Environment) Regulations 22(12), the implementation strategy must include arrangements for testing the OPEP response arrangements.

In all cases TGPPL, as titleholder under the OPGGS (Environment) Regulations, will retain control and responsibility for managing spill response.

Testing arrangements appropriate to the nature and scale of TGP’s offshore activities and covered by this OPEP are included in Table 9-2.

Following testing, TGPPL will review the outcome of the test, identify any non-conformances and opportunities for improvement, and track corrective actions to completion using TGP *Incident Reporting and Investigation Procedure* (TGP-698-PR-HSE-002). TGPPL will carry any non-conformances identified during the vessel activities forward for consideration in future activities as part of a continuous improvement in control measures and performance standards.

When the vessel for inspections and maintenance has been confirmed, TGPPL will arrangement for testing of the vessel’s SOPEP (including response arrangements) prior to the commencement of the offshore activities. All personnel on board the vessel will be trained and inducted in the application of the vessel’s SOPEP and in compliance with MARPOL Annex 1, as appropriate to class. Regular drills and exercises will be carried out to maintain the crew’s currency in response equipment use and in incident response procedures, as dictated by the SOPEP. These drills will include (but will not be limited to):

- spill response
- collision
- fire and explosion

All drills will be documented, debriefings undertaken, and corrective actions identified (including any revisions to the SOPEP) and tracked to completion by the Vessel Master.

**Table 9-2: Testing of Oil Spill Response Arrangements**

| Test                                | Objective   | Testing Frequency         | Participants | Verification  |
|-------------------------------------|---|---------------------------|--------------|---|
| Emergency response contact lists    | Test emergency response contact details are current and correct.  | Prior to arrival in field | TGPPL Vessel | Records confirm contact details are current and correct.          |
| Response systems function           | Test emergency communications between TGPPL and offshore vessels when the vessel is new to field.   | Prior to arrival in field | TGPPL Vessel | Records confirm effective communications.                         |
| Procedures in place and appropriate | Validate that vessel has a SOPEP / SMPEP and that it complies with IMO Guidelines for the Development of Shipboard Marine Pollution Emergency Plans for Oil | Prior to arrival in field | TGPPL        | Vessel inspection / audit records confirm SOPEP / SMPEP in place. |

| Test                     | Objective   | Testing Frequency                                    | Participants   | Verification   |
|--------------------------|---|--|--|--|
|                          | and/or Noxious Liquid Substance ( <a href="#">MEPC 85(44)</a> )   |  |  |  |
| Spill response resources | Confirm availability of spill response resources (if required) for: <ul style="list-style-type: none"> <li>on-site first strike response</li> <li>aircraft and/or vessels and trained observer(s) to undertake spill tracking</li> <li>spill trajectory modelling and fate assessment</li> <li>implementation of operational and scientific monitoring</li> </ul> | Three months prior to offshore activities commencing | TGPPL<br>AMOSC<br>Bhagwan Marine*<br>360 Aviation*<br>RPS* | Records confirm availability of service providers to provide service to non-member organisations |
| Response team            | Test the capabilities of the Emergency Management Team (EMT) to respond to an incident.   | Annually desktop exercise                            | TGPPL  | Records confirm drill exercise undertaken and any corrective actions identified.                 |

Note: \*An alternative acceptable resource may be sourced, if unavailable at time of confirmation

#### 9.4.9 Oil Spill Resources

Typical oil spill resources expected to be carried onboard the vessel are listed in the vessel's SOPEP. The vessel will carry spill containment and recovery kits with sufficient absorbent booms and materials to contain small to medium-scale deck spills. The Vessel Master will be responsible for ensuring that these kits are serviced and in-date (where relevant), and appropriately stocked at all times. Minor spills will be managed through good housekeeping practices and the use of absorbent materials. Deck spills will not be discharged into the ocean. Spill clean-up materials will be retained on board the survey vessel and stored in covered containers for subsequent disposal at an appropriate onshore facility.

#### 9.4.10 Proposed Spill Response Strategies

Spill response strategies and tactics were considered for the credible scenarios identified in Section 9.4.6 (maximum 100 L hydraulic oil and 40 m<sup>3</sup> MDO) are presented in Table 9-3. In the unlikely event of a spill, the potential use of each spill response strategy/tactic would be assessed for feasibility/practicability and human health and safety, with the recommended responses subject to Net Environmental Benefit Analysis (NEBA).

For Level 1 fuel spills in Commonwealth waters, initial actions will be undertaken by the vessel in accordance with the vessel SOPEP, with subsequent actions determined in consultation with AMSA (under NATPLAN). In such situations, the Vessel Master (or delegate) will monitor the spill and notify AMSA of the situation status. AMSA will monitor and continue to assess this level of spill.

For Level 2 spills, the Vessel Master will notify AMSA (Section 9.4.1). AMSA is the responsible CA for oil spills from vessels within the Commonwealth jurisdiction and will respond in accordance with its Marine Pollution Response Plan, as approved by the AMSA Executive. Upon notification of an incident, AMSA will assume control of the incident. TGPPL will support the response as required. After ensuring the safety of the crew and fire prevention (and notifying AMSA), the Vessel Master will implement the SOPEP and consider relevant 'source control' actions (e.g. tank lightering) to reduce the fuel volume released to the environment. AMSA will determine the appropriate response

strategies depending upon the protection priorities at risk within the EMBA. AMSA will determine the potential need for trajectory modelling and possible sea/aerial surveillance to confirm/inform trajectory predictions, depending on the location, prevailing weather conditions, available vessel responses and volume released. All selected response strategies will be in accordance with NATPLAN. Recognising that there is potential for impacts associated with spill response activities, these risks would be assessed as part of any NEBA coordinated by AMSA, to which TGPPL would contribute if requested by AMSA.

The NEBA process requires a number of data and information inputs to allow a robust and transparent assessment. AMSA will require TGPPL to provide this information in a timely manner. Data/information requirements will comprise:

- information from the activity-specific EP, including available modelling
- data/information obtained immediately prior to and following the spill, such as any monitoring to support situational awareness and capability/logistical information to support spill response
- any available baseline data

Where hydrocarbons from the spill are likely to cross from Commonwealth to State waters, AMSA will undertake the NEBA in conjunction with representatives from the relevant State CAs.

The Vessel Master will continue to provide situation reports (SITREPs) throughout the response activity, at the direction of AMSA. AMSA will maintain the response until relevant termination criteria are achieved.

Priority actions in the event of a large fuel spill are to make the area safe (protect human life) and to stop the leak to prevent further spillage, for example by transferring fuel to another tank.

If AMSA identify that an oiled wildlife response is required in Commonwealth waters, this will be based on NATPLAN oiled wildlife response. Responses in State waters will be implemented by or under the direction of State CAs and align with current State oiled wildlife response plans. The accumulation of hydrocarbons on shorelines is considered unlikely based on the modelling and the credible scenarios; however, to allow for an adaptable response, consideration will be given to migratory shorebird feeding and roosting sites/nesting colonies and any seal colonies in and adjacent to the EMBA. In addition, species protected under Part 3 of the EPBC Act will be given particular attention, with consideration of information provided in relevant plans, guidelines and policies

For spills in Commonwealth waters, initial actions will be undertaken by the vessel in accordance with its SOPEP and the TGP Offshore OPEP. Under the OPEP, Type 1 operational monitoring will be carried out, which would be coordinated by AMSA and TGPPL as required. Type II scientific monitoring would be led by TGPPL if contact with sensitive receptors is expected (see Section 9.4.1.1 for further information).

Given the low risk of adverse environmental impacts from a fuel spill in the operational area, and the low risk of shoreline contact meaning that active response and clean-up are unlikely to be required, there is unlikely to be environmental benefit to be gained from implementing additional strategies beyond 'monitor and evaluate' as assessed and recommended in Table 9-3. A fuel spill requiring active clean-up response is not considered a credible scenario and it is unlikely that sensitive receptors will be impacted in the short time during which concentrations of hydrocarbons are present at potentially ecotoxic levels around the spill location. The vessel's SOPEP and the OPEP would be implemented, and the residual risk is considered to be low. A NEBA would be undertaken shortly after the time of the spill to ensure environmental impacts arising from the response strategy are minimised. Full recovery of water quality and any affected biological assemblages or areas of shallow rocky reef is expected. TGPPL therefore considers the risk of potential impacts from the spill response to be ALARP and of an acceptable level.

**Table 9-3: Spill Response Strategies**

|              | Monitor and evaluate   | Mechanical dispersion   | Containment and recovery   | Shoreline protection   | Shoreline clean-up             | Chemical dispersion   |
|--------------|--|---|--|--|--------------------------------|---|
| Relevance    | Relevant to all spills.  | Can be considered for use on surface hydrocarbons   | Can be considered for use on surface hydrocarbons  | Low risk of shoreline exposure   | Low risk of shoreline exposure | Can be considered for use on surface (or subsurface) releases   |
| Mobilisation | Visual observation is the most likely practicable option available for Level 1. Potential need for OSTM and additional sea/aerial surveillance to confirm/inform trajectory predictions, depending on the location, prevailing weather conditions, available vessel responses and volume released. | Undamaged vessel(s) in area may be used for this purpose if available (e.g. not undertaking other response operations, such as transfer of personnel or fuel from ruptured tanks, or securing damaged vessel) | No surface booms/ equipment will be on vessel (only sufficient for small- to medium-scale deck spills). Vessels would not be mobilised from port for this scenario as most hydrocarbon would have weathered and spread too thin during period to allow an effective response | Unlikely   | Unlikely                       | Vessel-based (localised) dispersant application only if dispersants are on vessel. Airborne dispersant application would not be mobilised.  |
| Efficacy     | Information gathering for spills is critical for situational awareness and supporting a coordinated spill response for all spills  | Limited and localised entrainment via propeller wash or through use of vessel's fire suppression hoses  | Unlikely to be effective due to hydrocarbon type and thickness of slick. Limited effectiveness in offshore environments due to limitations of use (wind/sea conditions)  | Not considered effective for fuel spills that are likely to have undergone substantial weathering or for thin surface films – such as offshore spills of this nature | N/A                            | Most of the spill will be removed by natural degradation (weathering) before a response could be implemented. Remaining hydrocarbon may not be amenable to dispersants (e.g. spread thinly or with a patchy surface distribution). Additionally, optimal weathering occurs at the surface, so |

|               | Monitor and evaluate  | Mechanical dispersion   | Containment and recovery               | Shoreline protection  | Shoreline clean-up   | Chemical dispersion   |
|---------------|---|---|--|---|--|---|
|               |   |   |  |   |  | entrainment will increase persistence.  |
| <b>Issues</b> | Visual observations of surface hydrocarbons are limited to daylight. Understanding of entrained or dissolved hydrocarbon distribution is limited to spot-point water column sampling. | Potential human health and safety risks from e.g. VOCs. Optimal weathering will occur at the surface - entrainment increases persistence of hydrocarbons in the environment | Potential human health risks from VOCs | Potential for causing localised damage to shallow subtidal sensitive habitats (e.g. seagrasses, macroalgal communities, sponge beds) from anchoring of protection booms | The impacts of shoreline clean-up are related to the method(s) used. For example, mechanical clean-up involves removal of large volumes of contaminated beach sediment, which can affect shoreline profiles/coastal processes and remove feeding habitat of shorebirds; chemical clean-up involves use of chemical dispersants and control agents to remove hydrocarbons in situ, which can then wash into adjacent (potentially sensitive) environments; cropping removes saltmarsh foliage, which can for example impact saltmarsh recovery and disturb/ damage/ destroy nesting areas | Dispersants can have a certain inherent toxicity. The increased water accommodated fraction of dispersed hydrocarbons can be more toxic than either dispersants or hydrocarbons alone, and so this response poses a potential increase in environmental risk. |

|         | Monitor and evaluate   | Mechanical dispersion  | Containment and recovery  | Shoreline protection   | Shoreline clean-up   | Chemical dispersion                  |
|---------|--|--|---|--|--|--------------------------------------|
| Summary | <b>Recommended.</b> This response will be implemented, with the scale of response appropriate to the nature and scale of the spill | Not likely to reduce risk, therefore <b>not recommended</b> at this stage. | Unlikely to be effective or practicable, therefore <b>not recommended</b> at this stage | <b>Not recommended</b> at this stage as unlikely to be effective and shorelines are not predicted to be sufficiently exposed to spilled hydrocarbons | <b>Not recommended</b> at this stage as shorelines are unlikely to be sufficiently exposed to spilled hydrocarbons and hence response may cause more impacts than spill exposure | <b>Not recommended</b> at this stage |

#### 9.4.11 Operational and Scientific Monitoring Plan (OSMP)

The specific operational and scientific monitoring program undertaken following an oil spill would be developed based on the following information:

- location of the spill
- nature and scale of the spill, and likely evolution
- types of values and assets within the EMBA
- potential for impact upon sensitive resources
- review of available baseline data. An assessment of gaps in available baseline data and potential/requirements for post-spill/pre-exposure baseline data collection will be considerations in the monitoring design.

TGPPL will provide immediate on-site first strike response and AMSA as the CA will direct and lead any ongoing spill response arrangements and monitoring requirements in the event of an oil spill, supported by TGPPL.

All monitoring personnel will be suitably experienced and qualified for their role. A pre-mobilisation assessment of experience and certifications will be used to allocate specific roles to personnel. Multiple personnel will be allocated to monitoring roles to allow for shift rotations (where multiple shifts per day are required) or maintenance/inspection programme rotations (where staff are rotated from the field as part of effective fatigue management planning). The availability of personnel with in-date certificates (e.g. offshore medical, BOSIET and MSIC) will then identify which personnel will support immediate mobilisation or comprise the second rotation.

In the event of an oil spill, the primary response will be to 'Monitor and Evaluate' as detailed in Section 9.4.10. This will involve oil spill tracking and quantification using a vessel and/or aerial surveillance to track the movement of the spill and determine the potential risk to people and sensitive receptors. If required, trajectory modelling and fate assessment will also be undertaken. Adverse impacts on the shoreline or sensitive marine ecosystems in the event of a spill from Offshore TGP inspection and maintenance vessels are highly unlikely due to the size of vessels used, properties of hydrocarbons that could potentially be spilled, expected maximum spill volumes, high energy marine environment of Bass Strait, and the distance from the Offshore TGP to sensitive receptors (e.g. islands/shorelines).

##### 9.4.11.1 Operational Monitoring (Type I)

In the event of a hydrocarbon release, TGPPL would implement Operational (Type I) Monitoring in consultation with AMSA, and where appropriate, relevant State agencies. This monitoring will be implemented to;

- determine the extent and character of a spill
- track the movement and trajectory of surface hydrocarbon slicks
- identify areas/ resources potentially affected by surface slicks
- determine sea conditions/ other constraints
- identify the efficacy and potential impacts of spill response strategies and tactics (to inform any remediation activities and any subsequent NEBA assessments)

Oil Spill Trajectory Modelling (OSTM), used in conjunction with water quality monitoring, will help determine the potential extent and direction of travel of the plume of entrained hydrocarbon, and to determine the risk of hydrocarbon toxicity impacts to sensitive receptor locations.

This monitoring instigated by AMSA, will enable TGPPL to provide the necessary information to AMSA, to assist in planning appropriate response actions under NATPLAN.

Specific monitoring and data collection would include aspects of the following, as agreed with AMSA:

Immediate monitoring (approximately 0 to 6 hours):

- estimate of sea state
- estimates of wind direction and speed
- characteristics of the surface hydrocarbon slick (thickness and areal extent)
- GIS mapping
- OSTM triggered for a Level 2+ spills

Modelling if triggered, will be used in conjunction with other field observation/monitoring data to identify the likely direction, spread and potential speed of the slick. This will be used as a guide to support the planning for other operational monitoring scopes (e.g. water quality, sampling and fluorometers). This information will allow initial identification sites for sampling, which may also provide information on the subsurface distribution of hydrocarbons via vertical profiling of the water column (should sufficient levels of hydrocarbons remain to be detectable). Water column profiling data will be used to identify the sites and depths at which water samples will then be taken for laboratory analysis. Water sampling for hydrocarbons should be undertaken using suitable equipment by personnel trained in the relevant procedures. “Improvised” approaches will not be used as the samples obtained may result in inaccurate results or a failure or a delay in confirming the credible source of the spill.

To be mobilised (>6 hours):

- aerial surveillance for Level 2+ spills (if aircraft available offshore)
- GPS tracking using satellite drifter buoys (if available)
- measuring concentrations of entrained hydrocarbons through the water column (e.g. from water samples or using fluorometers)
- stochastic modelling predictions for Level 2+ spills.

For potential additional consideration:

- remote sensing (e.g. satellite-based optical imagery and Synthetic-Aperture Radar (SAR)) where available and practicable

Field-based operational monitoring will be restricted to daylight hours only, when surface slicks will be visible from either vessels or via aerial surveillance. Where available and practicable, remote sensing (e.g. using satellite-mounted optical imagery and Synthetic Aperture Radar (SAR)) may be used to provide situational awareness of the spatial distribution of the surface slick(s) during daylight, at night, or during overcast days.

The information gathered from this monitoring will be passed on to AMSA, but also via ongoing SITREP reports following the initial spill notification to JRCC Australia.

Should there be the need to implement field response activities using external parties, a response logistics plan would be developed and initiated immediately on notification of the spill. The plan would detail logistics, equipment personnel and detailed OSMP Implementation Plans.

TGPPL will implement, assist with, or contribute to (including funding if required) any other operational or scientific monitoring as directed by AMSA or outlined in this EP.

#### 9.4.1.2 Scientific Monitoring (Type II)

Scientific (Type II) Monitoring would be triggered and implemented if there is a reasonable expectation that there may be adverse impacts to marine biota or habitats in the area. The key receptors for which scientific monitoring studies (SMP1 – SMP5) would be considered are;

- benthic sediments (particularly soft sediments able to retain hydrocarbons, infauna)
- subtidal marine benthos (filter-feeders, macroalgae)
- seabird populations (foraging individuals)
- non-avian marine wildlife (cetaceans, marine reptiles and fish)

To allow for a flexible and adaptable scientific monitoring approach, additional receptors may also be considered should the nature and scale of the actual spill result in potential hydrocarbon exposure to shorelines or fisheries (SMP6 – SMP7):

- intertidal sediments and habitats
- fisheries and aquaculture operations.

#### 9.4.11.2.1. Initiation of Scientific Monitoring

After the Vessel Master provides notification to AMSA, TGPPL would implement scientific monitoring in the event of a Level 2 spill (or greater), in accordance with initiation criteria described in Table 9-4. A detailed OSMP Implementation Plan based on commonly-used, scientifically-robust and easily-accessible methods would be developed to ensure an efficient and technically-defensible response. This approach builds time efficiencies into development of the OSMP as existing TGPPL documentation (e.g. Health and Safety Plans) can be adapted to meet the requirements of the OSMP. Potential suppliers of available survey equipment would be identified as a priority, with a preference for those with existing contracts.

Relevant permit applications (e.g. for sediment/biota sampling) will be identified and submitted as soon as reasonably practicable. This approach does not work from the base assumption that permit requirements will be waived by relevant authorities in order to minimise potential delays in mobilisation and permit approval should permit requirements not be waived.

The OSMP Implementation Plan would detail the equipment required for each study, travel and freight arrangements, notifications, vessel support, HSE planning, and the sampling and analysis plan. Within 12 hours, a teleconference will be held between the TGPPL, AMSA, the nominated scientific personnel and the Vessel Master to finalise the requirements for implementation. Scientific teams can be on site within 48 to 72 hours of the implementation plan and budget being approved (and where permits are not required or have been approved). It is recognised that the spilled hydrocarbon is only likely to remain measurable on the water surface for a few days, and that realistically a response team would not be on site until it had dispersed. Given the extremely low probability of a catastrophic spill and hydrocarbon subsequently contacting sensitive biota, and the rapid weathering and likely dispersal of spilled hydrocarbons before a response team could be mobilised, TGPPL considers the costs associated with pre-emptive development of the Implementation Plan and full assembly and preparation of the response team to be grossly disproportionate to the benefit of a more rapid response; therefore this control has not been adopted.

The area of potential impact to be targeted in the scientific monitoring plan would be based on observations of the slick trajectory, water quality data collected during the operational phase, and available modelling. Due to the nature of the spill, potential for spread/dispersion, constrained spatial area of the EMBA, and likely field team mobilisation period, it is considered that post-spill pre-impact baseline data collection will likely not be feasible (but will remain a consideration for planning purposes).

Scientific monitoring would focus on determining potential short and long-term environmental impacts of the spill and response actions, and subsequent recovery). Scientific monitoring may continue for some time following the termination of the operational monitoring response.

**Table 9-4: Scientific Monitoring Study Objectives, Key Receptors and Initiation / Termination Triggers**

| Scientific monitoring study objective   | Key receptors   | Initiation triggers   | Termination triggers   |
|---|---|---|--|
| <p><b>SMP1: Monitoring for Hydrocarbons in Benthic Sediments</b></p> <p><b>Aim:</b> To understand the characteristics, persistence and fate of hydrocarbons in sediments to provide data for the assessment of potential impacts on sea bed sediments.</p> <p>To understand the effect of hydrocarbon concentrations on infaunal macrobiota.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Quantify hydrocarbon concentrations at locations within the EMBA</li> <li>- Quantify change in sediment hydrocarbon concentrations at sampling locations over time (considering seasonal and inter-annual change)</li> <li>- Provide sediment hydrocarbon data to support determination of potential cause-effect relationships between spill hydrocarbons and changes in benthic communities</li> <li>- Identify potential areas of benthic impact based on sediment hydrocarbon concentrations and impacts to benthic macroinfaunal assemblages.</li> </ul> | <p>Subtidal sediments within the EMBA, with particular focus on sensitive locations</p> | <p>Level 2 spill or greater</p> <p><b>and</b></p> <p>where modelling and/or operational monitoring (e.g. water quality) indicates likely exposure to benthic sediments</p>                | <p>The results of the monitoring tasks achieved the objectives</p> <p><b>and</b></p> <p>appropriate, meaningful and scientifically defensible results have been achieved</p> <p><b>and</b></p> <p>sediment contamination results showed recovery to a point where hydrocarbon concentrations are no longer demonstrated to be a primary driver of infauna assemblage composition</p>   |
| <p><b>SMP2: Monitoring and Surveys of Shoreline and Intertidal Benthos to Determine Impacts of Oil Spill and Recovery</b></p> <p><b>Aim:</b> To determine and monitor the impact of the spill, dispersants or response activities and potential subsequent recovery for intertidal benthos at both individual (species) and community (habitat) levels.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- the monitoring of the spill and spill management operations on intertidal marine coastal habitats (like tidal seagrass, tidal mud flats, mangroves, intertidal saltmarsh and salt pans)</li> <li>- monitoring associated organisms (like fishes, crustaceans, arboreal mangrove biota, microphytobenthos, macroalgae, mangrove/saltmarsh plants, seagrass)</li> <li>- establish necessary responses</li> <li>- quantify the biological and ecological effects of the spill and response activities.</li> </ul>                                     | <p>Invertebrates, Intertidal habitats, Seagrasses, Mangroves, Shorelines</p>            | <p>Level 2 spill or greater</p> <p><b>and</b></p> <p>If modelling predicts possible shoreline/intertidal contact.</p> <p><b>or</b></p> <p>Any reports of shoreline/intertidal contact</p> | <p>Appropriate, meaningful and defensible scientific monitoring results for intertidal benthos have been achieved</p> <p><b>and</b></p> <p>All reasonable and practical measures have been taken to assess the impact of the spill on intertidal benthos</p> <p><b>and</b></p> <p>Affected intertidal benthos has returned to baseline (or reference site) conditions</p> <p><b>and</b></p> <p>Oil pollution impacts on critical intertidal benthos species and taxa are no longer identifiable.</p> |
| <p><b>SMP3: Monitoring of Subtidal Marine Benthos to Determine Impacts of Oil Spill and Recovery</b></p>  | <p>Filter feeders, benthic primary producers,</p>                                       | <p>Level 2 spill or greater</p> <p><b>and</b></p>   | <p>Reasonable and practicable scientifically-robust measures have been taken to assess the effects or</p>  |

|  |  |   |   |
|--|--|---|---|
| <p><b>Aim:</b> To enable assessment of impacts and potential for subsequent recovery of benthic marine habitats (soft and hard substrate habitats) and associated macro-epibenthic organisms (e.g. macroalgae, seagrass, sponges and other filter feeders, motile invertebrates and associated fishes) in response to a spill event and associated response activities. Monitoring to document recovery of affected biota and habitats.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- characterise and quantify habitat composition and coverage/abundance of macro-epibenthic organisms and site-associated demersal fish</li> <li>- allow comparison with historical (baseline) data and seasonal/inter-annual surveys</li> <li>- define recovery in macro-benthic and demersal populations and recovery/change in habitat type.</li> </ul> | <p>demersal fishes, invertebrates (e.g. commercially important rock lobsters, scallops) – with particular focus on sensitive locations</p> | <p>where modelling and/or operational monitoring (e.g. water quality) indicates likely exposure to benthic habitats</p> <p><b>or</b></p> <p>any reports of contact</p>  | <p>impact of the spill on benthic habitats / communities</p> <p><b>and</b></p> <p>oil pollution effects / impacts on benthos are no longer detectable, or impacts shown to be within accepted protection limits (to be defined in Sampling and Analysis Plan)</p> <p><b>and</b></p> <p>when a trend towards post-impact recovery or alternate developmental trajectory has been demonstrated (in comparison with control/reference sites) at sites that were exposed to elevated concentrations of hydrocarbons</p>   |
| <p><b>SMP4: Undertaking Wildlife Surveys to Determine Impact of Oil Spill on Seabird and Shorebird Populations and Recovery</b></p> <p><b>Aim:</b> To assess any short-term or longer-term environmental effects on seabird and shorebird populations within the study area that may have resulted from the oil spill (i.e. damage extent and recovery). Monitoring to document recovery of affected biota and habitats.</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- quantify foraging seabird and shorebird populations</li> <li>- quantify foraging, nesting or breeding shorebird populations</li> <li>- quantify records of oiled birds and bird mortalities</li> <li>- allow comparison of changes in populations over time (seasonal and inter-annual)</li> </ul>   | <p>Foraging seabird and coastal shorebird populations</p>  | <p>Level 2 spill or greater</p> <p><b>and</b></p> <p>where post-spill observations indicate possible contact with foraging seabird populations</p> <p><b>and/or</b></p> <p>any reports of oiled or dead seabirds</p> <p><b>and/or</b></p> <p>shoreline oil indicates possible contact with shoreline bird habitats or populations</p> | <p>The extent of damage and rate of recovery of key seabird/shorebird behaviour and breeding activities has been quantified using scientifically-robust methods</p> <p><b>and</b></p> <p>The affected environment or natural resource has returned to baseline conditions (taking into account natural variability) in terms of breeding population (for seabirds) or counts (for shorebirds), with regard to reference sites and/or baseline data</p> <p><b>and</b></p> <p>oil pollution effects/impacts on critical species and taxa are no longer detectable</p> |
| <p><b>SMP5: Desk study and survey: Occurrences of Oiled/Mortalities of Non-Avian Marine Wildlife to Determine Impacts of Oil Spill and Recovery</b></p> <p><b>Aim:</b> To assess any short-term or longer-term environmental effects on non-avian marine wildlife that may have resulted from the oil spill (i.e. damage extent and recovery). Monitoring to document recovery of affected biota and habitats.</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>- quantify records of sightings of dead or oiled marine wildlife</li> </ul>   | <p>Marine mammals, sharks, rays, bony fishes, marine turtles</p>   | <p>Level 2 spill or greater</p> <p><b>and</b></p> <p>where modelling indicates possible contact with populations</p> <p><b>and/or</b></p>   | <p>Reasonable and practical measures have been taken to assess the effects or impact of the spill on non-avian marine wildlife</p> <p><b>and</b></p> <p>restoration or resumption of key biological processes (e.g. abundance, distribution, breeding) necessary to ensure post-impact recovery have been identified</p> <p><b>and</b></p>  |

|   |  |  |  |
|---|--|--|--|
| <ul style="list-style-type: none"> <li>- allow seasonal or inter-annual comparison of records of dead or oiled wildlife</li> </ul>  |  | <p>any reports of oiled or dead non-avian marine wildlife</p>  | <p>oil pollution impacts on non-avian marine wildlife are no longer detectable</p>   |
| <p><b>SMP6: Monitoring of Intertidal Receptors to Determine Impacts of Spill Hydrocarbons and Recovery</b></p> <p><b>Aim:</b> To understand the behaviour, persistence and fate of hydrocarbons in intertidal sediments, and enable assessment of potential impacts and recovery to intertidal habitats. To identify the potential implications of changes in intertidal communities to other biota (e.g. shorebirds).</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- quantify hydrocarbon concentrations at locations within the EMBA</li> <li>- characterise and quantify habitat composition and coverage/abundance of epibenthic and infaunal organisms</li> <li>- quantify change at sampling locations over time (considering seasonal and inter-annual change)</li> <li>- define recovery/change in habitat type and epibenthic and infaunal organisms</li> <li>- provide sediment hydrocarbon data to support determination of potential cause-effect relationships between spill hydrocarbons and changes in benthic communities.</li> </ul> | <p>Intertidal sediments, infaunal communities and epibiota, with particular focus on shorelines that have been observed to be, or are predicted to have been, exposed to spill hydrocarbons</p>      | <p>Level 2 spill or greater<br/><b>and</b><br/>where modelling and/or operational monitoring indicates likely exposure to intertidal habitats.</p>   | <p>The results of the monitoring tasks achieved the objectives<br/><b>and</b><br/>appropriate, meaningful and defensible scientific monitoring results have been achieved<br/><b>and</b><br/>sediment contamination results have shown recovery to a point where hydrocarbon concentrations are no longer demonstrated to be a primary driver of habitat composition.</p>  |
| <p><b>SMP7: Impacts to Fisheries and Aquaculture</b></p> <p><b>Aim:</b> To understand the potential short and long-term impacts and recovery of fisheries (should they be closed), and aquaculture facility/operation that have been exposed to spill hydrocarbons</p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- quantify hydrocarbons in tissue of organisms targeted by fisheries or aquaculture</li> <li>- determine potential effects on population size/structure</li> <li>- identify potential impacts to organism health</li> <li>- determine potential risks to human health.</li> </ul>   | <p>Target areas or species of Fisheries or Aquaculture interest, with particular focus on shorelines that have been observed to be, or are predicted to have been, exposed to spill hydrocarbons</p> | <p>Level 2 spill or greater<br/><b>and</b><br/>where fisheries have been closed in response to a hydrocarbon spill<br/><b>and/or</b><br/>where modelling and/or operational monitoring indicates likely exposure to aquaculture operations or key broodstock collection locations.</p> | <p>he results of the monitoring tasks achieved the objectives<br/><b>and</b><br/>appropriate, meaningful and defensible scientific monitoring results have been achieved<br/><b>and</b><br/>sediment contamination results have shown recovery to a point where risks to human health are understood<br/><b>and</b><br/>data on population structure have shown that recovery is possible through retention of sexually-mature adults and demonstrated recruitment of juveniles.</p> |

#### 9.4.11.2.2. Scientific Monitoring Team

In the event of the requirement to undertake scientific monitoring, TGPPL would engage a specialist subcontractor to rapidly finalise response plans and to deploy the required resources to undertake the monitoring activities. Primary scientific monitoring studies could include some, or all, of the elements described in Table 9-4 depending on the size, timing and location of the spill.

An adaptable scientific monitoring response must allow for the potential for operational monitoring or situational awareness obtained during a spill to indicate exposure to additional sensitive receptor types, depending on the nature and scale of the actual release.

For each SMP described in Table 9-4 a detailed study template would be developed following initiation. This is summarised in Table 9-5.

**Table 9-5: Scientific Monitoring Studies Template**

| Study Heading  | Description  |
|--|--|
| Monitoring Objective and Rationale   | Details the monitoring objectives for the study to focus sampling design   |
| Natural Resource Description and/or Importance                                 | Provides background information relevant to the context of the study; distribution, temporal patterns, life-stages present, critical habitats and processes  |
| Activation Trigger for Monitoring Tasks  | Criteria to initiate the scientific monitoring study, based on likely exposure to harmful concentrations (acute and/or chronic)  |
| Potential Sensitivity to Spilled Hydrocarbon at Exposure Levels                | General context of possible impacts associated with the spill, exposure pathways and effects concentrations. Range of measurable responses   |
| Spatial awareness  | Outcomes of operational monitoring that support survey design  |
| Monitoring methods / sampling and analysis plan                                |  |
| Overview of the Monitoring Method  | Provides a scientific and practical context for the monitoring methods to be used. Includes consideration of statistical methods and sampling effort required to achieve the monitoring objectives   |
| Details of the Survey Design, Methods, Standards and Techniques to be Utilised | Provides the information required to collect samples in a defined geographic area (based on operational monitoring data) as part of a robust scientific study program.<br><br>Includes relevant specifications, standards and requirements of the study    |
| Permits  | Details any permit requirements and/or exemptions  |
| Data Collection, Analysis and Reporting Requirements                           | Provides details on the necessary data requirements including baseline information, analytical parameters and detection limits, and metadata. Details the deliverables from the study  |
| Personnel Resourcing Requirements, Qualifications and Skills                   | Provides minimum skill/experience, qualifications/certifications and resourcing requirements to deliver the study safely and robustly<br><br>Considers shifts and survey rotations for effective fatigue management Includes contingency resource planning |

| Study Heading   | Description   |
|---|---|
| Field Equipment, Survey Platforms and Logistics                                       | Details equipment and logistics requirements to fulfil the study requirements   |
| Recommended Procedures for Data Collection, Sampling, Storage, Transport and Analysis | Provides the necessary sampling and analytical techniques, and standards to ensure data quality and ensure consistency throughout the study (including Chain of Custody (CoC) forms)  |
| Risk Assessment, Occupational Health and Safety Considerations                        | Describes the risks and mitigation controls associated with undertaking the study   |
| Data Management, QA/QC, Transmittal and Archiving                                     | Provides QA / QC requirements for all data obtained as part of the study  |
| Supporting Documents, Standards and References  | Identifies the relevant guidelines and high-level references required to implement the study  |
| Reporting Requirements  | <p>Provides description of reporting of the scientific outcomes of the survey(s), including identification and qualification/quantification of potential impacts and subsequent recovery</p> <p>Each survey report identifies the need for any further scientific monitoring based on the survey outcomes</p> |
| Termination criteria  |   |
| Criteria for the Terminating the Monitoring Activity                                  | Completion criteria to be met to demonstrate that study objectives have been achieved to terminate the study  |

## 10. ENVIRONMENTAL PLAN CONSULTATION

### 10.1 Introduction

Consultation with the community and key relevant persons has been a feature of the TGP from its inception and will continue for the duration of the life of the TGP. Initial consultation prior to construction and during pipeline operations from 1999 to 2012 were undertaken by the previous TGP operator, Tas Gas Networks. During this period most relevant persons indicated they did not have major concerns during construction or operation of the TGP and no issues were recorded.

For consultation on the Environmental Plan, TGPPL developed the document *Consultation Process for Environmental Plan* (TGP-698-PR-RA-003). In matters of ongoing consultation, see Section 10.14.

Two rounds of consultation were conducted for this EP. The first round of consultation commenced in September 2024 and concluded in November 2024. Following feedback from DEECA, a second round of consultation was conducted between October 2025 and November 2025. There were no objections or claims received, refer to Appendix E.

The judgements of the Federal Court of Australia Decision (Tipakalippa v National Offshore Petroleum Safety and Environment Management Authority (No 2), 2022) and Appeal (Santos NA Barossa Pty Ltd v Tipakalippa, 2022) represents the law regarding requirements for consultation in accordance with the Commonwealth OPGGS (Environment) Regulations.

Following the Appeal and the Federal Court of Australia Decision in Cooper v National Offshore Petroleum Safety and Environment Management Authority (No 2), 2023, TGP's methodology for consultation reflects the intent of these judgements.

TGP understand that resulting from the Federal Court decision, the level of expectation and requirements for consultation under the Commonwealth OPGGS (Environment) Regulations also applies at the State level.

Additionally, the process was informed by the following NOPSEMA guidelines and relevant information on consultation best practice.

- GL 1721 – Environment Plan decision making – January 2024
- GL 1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2024
- GL 2086 – Consultation in the course of preparing an environment plan – May 2023
- GN 1847 – Responding to public comment on environment plans – January 2024
- GN 1344 – Environment plan content requirements – September 2020
- GN 1785 – Petroleum activities and Australian Marine Parks – January 2024
- Consultation on offshore petroleum environment plans – Information for the community

TGP recognises and respects the important contribution of relevant persons, including First Nations people, throughout the offshore petroleum activities. TGP is committed to ensuring that relevant persons are identified, are given sufficient information and a reasonable amount of time to allow them to make an informed assessment of the possible consequences of a proposed petroleum activity on them.

The consultation process, outlined in Section 10.3, allows TGP to ascertain, understand and address the environmental impacts and risks that might arise from its activities. The consultation process allows TGP to receive information that the Company may not otherwise receive, and to use this information to enhance its understanding of the environment, people, communities, heritage values, and social and cultural features that may be affected by the activities, thus informing decision making.

For the purpose of this EP, TGP defines consultation as the process of communication that leads to a decision where the views of relevant persons have been considered. With engagement aiming to building long-term relationships. TGP will consider and adopt appropriate measures, in response to the matters raised by relevant persons, in the management of environmental impacts and risks as part of the EP development process.

## 10.2 Legislative Requirements

Consultation and engagement activities for TGP activities is undertaken in compliance with Commonwealth and State legislation as outlined in Table 10-1.

**Table 10-1: Commonwealth and State Consultation Legislative Requirements**

| Commonwealth – OPGGS (Environment) Regulations 2023   | Victoria – OPGGS Regulations 2021   | Tasmania – Petroleum (Submerged Lands) (Management of Environment) Regulations 2022   | How TGP is meeting the legislative requirements  |
|---|---|---|--|
| <p>Reg 25(1) In the course of preparing an environment plan (including a revised environment plan referred to in Division 5) a titleholder must consult each of the following (a relevant person):</p> <ul style="list-style-type: none"> <li>a) Each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the EP, or the revision of the EP, may be relevant;</li> <li>b) If the plan relates to activities in the offshore area of a State – the Department of the responsible State Minister;</li> <li>c) If the plan relates to activities in the Principal Northern Territory offshore area – the Department of the responsible Northern Territory Minister;</li> <li>d) A persons or organisations whose functions, interests or activities<sup>2</sup></li> </ul> | <p>Reg 13F(1) In the course of preparing an environment plan, or a variation of an environment plan, a titleholder must consult each of the following:</p> <ul style="list-style-type: none"> <li>a) any authority or entity of the State to which the activities to be carried out under the environment plan, or variation of the environment plan may be relevant;</li> <li>b) a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the environment plan, or the variation of the environment plan;</li> <li>c) any person or organisation that the titleholder considers relevant</li> </ul> | <p>Reg 14 In preparing, or revision, an environment plan for a petroleum activity, an operator must:</p> <ul style="list-style-type: none"> <li>a) consult each relevant person as to the relevant person’s assessment of possible consequences of the petroleum activity for the relevant person’s functions, interests or activities</li> </ul> | <p>TGP identified relevant persons that aligned with the Regulations and consulted with them. Refer to Section 10.3.</p> |

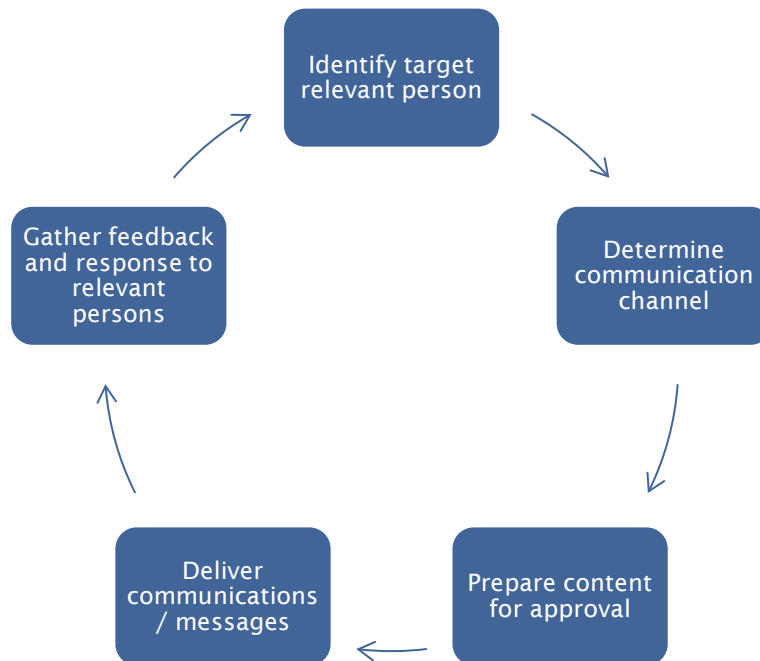
<sup>2</sup> Consistent with the Consultation in the course of preparing an environment plan Guideline, a ‘Function’ refers to a power or duty to do something; ‘Interest’ refers to any interest possessed by an individual whether or not the interest amounts to a legal right or is a proprietary or financial interest or relates to reputation; and ‘Activities’ may be interpreted in a broad sense, but are likely directed to activities that a relevant person is already doing.

| Commonwealth – OPGGS (Environment) Regulations 2023   | Victoria – OPGGS Regulations 2021  | Tasmania – Petroleum (Submerged Lands) (Management of Environment) Regulations 2022  | How TGP is meeting the legislative requirements   |
|---|--|--|---|
| <p>may be affected by the activities to be carried out under the EP;</p> <p>e) Any other person or organisation that are considered relevant.</p>   |  |  |   |
| <p>Reg 25(2) For the purpose of the consultation, the titleholder must give each relevant person sufficient information to allow the relevant person to make an informed assessment of the possible consequences of the activity on the functions, interests or activities of the relevant person</p> | <p>Reg 13F(2) For the purpose of the consultation, the titleholder must give each of those consulted sufficient information to allow them to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> | <p>Reg 14(b) provide each relevant person with sufficient information relating to the environment plan to enable the relevant person to make an informed assessment of those possible consequences</p> | <p>TGP defines “sufficient information” to include:</p> <ul style="list-style-type: none"> <li>• sharing information that is appropriate to the relevant person’s needs;</li> <li>• detailing activities and any impacts and risks that may be relevant to them;</li> <li>• describing the control measures proposed to manage the potential impacts.</li> </ul> <p>TGP considers the functions, interest and activities of relevant persons, and the impacts and risks that could affect them when determining the information requirements. It is acknowledged that information may need to be provided in an iterative manner.<br/>Additionally refer to Appendix D.</p> |
| <p>Reg 25(3) The titleholder must allow a relevant person a reasonable period for the consultation.</p>   | <p>Reg 13F(3) The titleholder must allow a reasonable period for the consultation.</p>   | <p>Reg 14(c) allow the relevant person a reasonable time period to undertake the informed assessment.</p>  | <p>The consultation period during the development of the EP is generally 30 days, subject to the nature and scale of activities.</p> <p>If no response is received during this period a follow up period of 10 days is provided.</p>  |

| Commonwealth – OPGGS (Environment) Regulations 2023  | Victoria – OPGGS Regulations 2021   | Tasmania – Petroleum (Submerged Lands) (Management of Environment) Regulations 2022   | How TGP is meeting the legislative requirements   |
|--|---|---|---|
| <p>Reg 25(4) The titleholder must tell each relevant person the titleholder consults that:</p> <ul style="list-style-type: none"> <li>a. the relevant person may request that particular information the relevant person provides in the consultation not be published; and</li> <li>b) information subject to such a request is not to be published under this Part.</li> </ul>   |   |   | <p>Each relevant person was advised that information provided by the relevant person could remain confidential if request, refer to Appendix D.</p> |
| <p>Reg 24(b) a report on all consultations under section 25 of any relevant person by the titleholder, that contains:</p> <ul style="list-style-type: none"> <li>i. a summary of each response made by a relevant person; and</li> <li>ii. an assessment of the merits of any objection or claim about the adverse impact of each activity to which the environment plan relates; and</li> <li>iii. a statement of the titleholder’s response, or proposed response, if any, to each objection or claim; and</li> <li>iv. a copy of the full text of any response by a relevant person;</li> </ul> | <p>Reg 19(b) a report on all consultations between the titleholder and relevant authorities, interested persons and organisations in the course of developing the environment plan.</p> | <p>Reg 22(1)(b) a consultation report, in accordance with subregulation (2), on the consultation undertaken by the operator under regulation 14.</p> <p>Reg 22(2) The consultation report must include –</p> <ul style="list-style-type: none"> <li>a. copy of the full text of an assessment made by a relevant person under regulation 14 and provided to the operator in regulation; and accordance with that</li> <li>b. a summary of that assessment; and</li> <li>c. the operator’s opinion on the merits of that assessment; and</li> <li>d. the operator’s response, or proposed response, if any, to that assessment.</li> </ul> | <p>A summary of the consultation responses is provided in Section 10.14 and the consultation notes are provided in Appendix E</p>                   |
| <p>Reg 35(7)(viii) details of consultation already undertaken, and plans for ongoing consultation</p>  | <p>Reg 13E(4)(viii) details of consultation already undertaken, and plans for ongoing consultation.</p>   | <p>Reg 13(2)(vi) details of consultation already undertaken under regulation 14, and plans for consultation, if any.</p>  | <p>The consultation process is detailed in Section 10.3 and Appendix E.<br/>The ongoing consultation process is outlined in Section 10.14</p>       |

### 10.3 Consultation Process

To adhere to the guidelines provided by the Commonwealth and State Environment Regulations, and as guided by the NOPSEMA *Consultation in the Course of Preparing an Environment Plan Guideline*, the approach to consultation was to ensure transparency and collaboration with the relevant persons involved either directly with the activities or by interest in the operational area and environmental impacts. This is done as part of the consultation cycle (Figure 10-1).



**Figure 10-1: Consultation Cycle**

The principal consultation objectives are:

- Confirm existing Relevant Persons
- Identify whether there are additional Relevant Persons to those identified with regard to previous TGP activities and consultation undertaken
- Initiate and maintain open communications between TGP and Relevant Persons, relevant to their functions, interests and activities
- Proactively work with Relevant Persons on recommending strategies to minimise negative impacts and maximise positive impacts of all activities
- Provide for ongoing consultation that reflects the reasonable requirements of Relevant Persons and the activity schedule.

TGP will continue to maintain records of consultation and track commitments made through to closure of the pipeline.

### 10.4 Definitions

To ensure a consistent approach to identifying and consulting with relevant persons in relation to this EP, the definitions included in Table 10-2 have been used as the basis of the consultation methodology.

**Table 10-2: Consultation Definitions**

| Term                                    | Definition   |
|---|--|
| Activities                              | Tasks/operations undertaken by TGP, as described in Section 2.   |
| Claims                                  | Evidence provided that suggests there are potential adverse impacts from the petroleum activities to which this EP relates.  |
| Consultation                            | Targeted and tailored information provided to enable effective consultation on a specific planned activity within a defined timeframe.   |
| Consultation period                     | Generally 30 days, subject to the nature and scale of the proposed activity.   |
| Engagement                              | Ongoing relationship building or general engagement not related to a specific activity or defined timeframe.   |
| Environment                             | Define in the Regulations as:<br>(a) ecosystems and their constituent parts, including people and communities;<br>(b) natural and physical resources;<br>(c) the qualities and characteristics of locations, places and areas;<br>(d) the heritage value of places; and<br>(e) the social, economic and cultural features of the matters mentioned in (a), (b), (c) and (d). |
| Environment that May Be Affected (EMBA) | Oil spill modelling is used to determine the total areas that could be exposed to hydrocarbon, including trace concentrations of oil in the water column, resulting from any spill and is used for planning purposes to ensure that all social and environmental sensitivities are acknowledged, described and considered in the development of the EP.                      |
| Functions                               | Refer to a power or duty to do something.  |
| Geographical consultation boundary      | The geographical areas (OA and EMBA) used as the basis for identifying relevant persons.   |
| Interests                               | Represent a connection to the values described in the EP. Any interests possessed by an individual, whether or not that interest amounts to a legal right or is a proprietary or financial interest or relates to reputation.  |
| Objection                               | A reason or argument that asserts that there are potential adverse impacts arising from the petroleum activities related to the EP.  |
| Operational Area (OA)                   | Immediate area (200 m radius) around the pipeline.   |

| Term                       | Definition  |
|----------------------------|---|
| Petroleum activity         | A planned offshore petroleum activity for which an EP is required. This also includes activities undertaken in the event of an emergency situation such as an oil spill response.   |
| Reasonable period          | <p>A reasonable time for relevant persons to identify the effect of a proposed activity on their functions, interests or activities and make a response detailing any objections or claims.</p> <p>A reasonable period for relevant persons to review and provide a response is generally 30 days, based on nature and scale of the proposed activity.</p> <p>Where engagement is ongoing after this period, TGP will continue to engage with the relevant persons until sufficient evidence/justification is provided to close the consultation.</p> |
| Relevant person            | Can be a person, organisation, government department or agency that falls within one of the classifications list in Table 10-1.   |
| Unplanned activity / event | <p>An activity that is not planned, such as a loss of containment of hydrocarbons due to a collision.</p> <p>Relevant persons</p>   |

## 10.5 Identification of Relevant Persons

TGP has a list of previous relevant persons that were contacted at the last renewal of the Environmental Plan from 2019 that it evaluated as a required group to recontact. Additional groups have been identified with a review of updates to legislation and regulations identified through the EP renewal process and updated descriptions of activities to be conducted by TGP over the next 5-year period.

In addition to the Environmental Regulations, the identification of relevant persons by TGP is informed from the decision made by the Federal Court of Australia in *Tipakalippa v National Offshore Petroleum Safety and Environmental Management Authority (No 2)* [2022] FCA 1121 on 21 September 2022 (Justice Bromberg's Decision) and subsequent appeal decision *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Appeal Decision) on the 2 December 2022, TGP recognises the updated requirements for petroleum titleholder's approach to identify and contact relevant persons and best practices throughout the relevant person consultation process for the EP.

- Reviewing the receptors identified in the existing environment within the EMBA (Section 4), persons or groups linked to those receptors, and their functions, interests and activities.
- Review existing relevant persons identified in the TGP Relevant Person Register.
- Review previous TGP consultation records.
- Identify other relevant persons that have not previously been identified in the course of consultation this includes discussing with existing relevant persons the identification of any new relevant person or changes to existing relevant persons contacts or consultation preferences.
- Review changes to government departments
- Reviewed guidance notes from NOPSEMA to inform relevant persons at the Commonwealth level

- Researched industry bodies, other operators, oil spill response organisations and emergency service organisations that operate within the environment that may be affected (EMBA) of TGP activities
- Review Commonwealth and State fisheries jurisdictions and fishing effort in the region and/or use peak bodies SIV, SETFIA as conduits to, or representatives of, fishing members.

A list of the relevant persons and justifications can be found in Appendix E.

### 10.5.1 Department or Agency of the Commonwealth

TGP used the updated NOPSEMA Guideline GL1887 - Consultation with Commonwealth agencies with responsibilities in the marine area to inform the selection of Departments and Agencies within the Commonwealth Government which had relevant functions or responsibilities that overlapped with the activities both planned and unplanned within the EP describing the Operations of the TGP.

### 10.5.2 Department or Agency of the State

An evaluation of Government Agencies of the States in which the TGP Operates was made from previous EP in addition to identifying new departments or changes to departments since the last revision of the EP. From this list, TGP identified if the planned or unplanned activities would require action or input from the department or agency to determine relevance.

### 10.5.3 Department of the Relevant State Minister

The Minister of the State (other than Tasmania) who is authorised under a law of the State to perform the functions, and exercise the powers, of a member of the Joint Authority for the State under this Act and as TGP operates in Tasmania, the Minister of Tasmania who is responsible for the State Petroleum Submerged Lands Act for Tasmania. These were:

- **Victoria:** Department of Energy, Environment and Climate Action – Resources Victoria, Regulatory Operations
- **Tasmania:** Department of State Growth – Mineral Resources Tasmania

### 10.5.4 Persons or Organisations impacted by Activities carried out under Environmental Plan

Within this group, TGP considers several agencies, organisations, groups and other persons may be impacted by the planned and unplanned activities conducted by TGP in the Operation of the pipeline. These include, but are not limited to; local government authorities, non-government organisations (research, environmental groups, industry, operations or other), first nations groups, commercial fisheries, tourism and recreational groups, and other marine users (within the EMBA).

#### 10.5.4.1 Local Government

To obtain the local government relevant person contacts, TGPPL researched the local councils and municipalities within the geographical region of the OA and EMBA. There was one identified in each state that fell within the geographical limits of the scope of the defined geography.

#### 10.5.4.2 Non-Government Organisations

These groups or organisations were considered again primarily by geography for operating in the area of the OA primarily and where significant impact was considered within the EMBA. This included researching other petroleum or energy organisations within close proximity to the OA, in addition to other organisations or third parties that intersect with the operation of the TGP.

Other considerations for this group of impacted organisations were

#### 10.5.4.3 Indigenous Registered Aboriginal Parties (RAPs), Associations, and Corporations

Since 2007, the Declaration on the Rights of Indigenous Peoples by the United Nations General Assembly was a significant step in affirming equal rights for indigenous groups, and emphasizing

the value of knowledge, traditions and culture. In particular reference to *Article 5 - Indigenous peoples have the right to maintain and strengthen their distinct political, legal, economic, social and cultural institutions, while retaining their right to participate fully, if they so choose, in the political, economic, social and cultural life of the State* (United Nations, 2007), TGPPL endeavour to understand potential cultural sensitivities, impacts of activities that are described in this EP and improve knowledge and awareness of areas of cultural significance in the OA and EMBA. For these reasons, TGPPL explored the following approaches to contact and identify relevant persons.

In Victoria using the Victorian Aboriginal Heritage Council resources (Victorian Aboriginal Heritage Council, 2024), identification of aboriginal relevant persons was done by reviewing Victoria's Registered Aboriginal Parties Map and overlaying with the OA and EMBA. TGPPL considered the RAPs identified as the primary point of contact for matters relating to assessment of the EP on behalf of the collective group. RAPs are responsible for the following core functions:

- evaluating Cultural Heritage Management Plans
- assessing Cultural Heritage Permit applications
- making decisions about Cultural Heritage Agreements
- providing advice on applications for interim or ongoing Protection Declarations
- entering into Aboriginal Cultural Heritage Land Management Agreements with public land managers
- nominating Aboriginal intangible heritage to the Victorian Aboriginal Heritage Register and managing intangible heritage agreements.

For Tasmania, the Department of Natural Resources and Environment Tasmania maintain a register of Aboriginal Community Organisations (Department of Natural Resources and Environment Tasmania, 2024). This was used as a starting point to research and understand geographical relevance to the TGP OA and EMBA, as well as the role and function of the organisation to determine if a relevant person/group.

Additionally, the Tasmanian Government has departments that support Aboriginal Heritage matters, Aboriginal Heritage Tasmania and Aboriginal Heritage Council, which were also considered relevant due to their role within the Department of Natural Resources and Environment for Tasmania.

To ensure any other relevant indigenous groups, corporations or communities were identified, a general search of terms associated with 'Tasmania', 'Aboriginal', 'indigenous', 'group' and contact information was done and results were filtered to ensure relevance to geographical OA and EMBA for TGPPL Operations.

All groups were considered relevant irrespective of whether they were government affiliated, as the nature of impacts and understanding of culturally significant areas is not well established currently, so TGPPL wanted to include feedback from as many relevant persons as possible.

Where practicable, multiple lines of communication should be attempted with all relevant persons. If requested as explained in Section 10.4 by the RAPs or Aboriginal Community Organisations, additional consultation can be triggered to support a broader collection of responses. This is of more significance when considering the community groups that are required to meet with members of their respective group, community or other to make decisions or provide feedback, compared to the registered parties that have the authority to effectively make decisions on behalf of the group.

#### 10.5.4.4 Fisheries

To determine relevant fisheries, the representative bodies were identified through the Commonwealth or State Commercial Fishery with a fishery management plan as recognised under the *Commonwealth Fisheries Management Act (1991)* for the Commonwealth, *Fisheries Act (1995)* for Victoria and *Living Marine Resources Management Act (1995)* for Tasmania.

Additionally, the Australian Fisheries Management Authority (AFMA) - *Petroleum industry consultation with the commercial fishing industry* (AFMA, 2024) provides a comprehensive methodology to contact the Commonwealth fisheries contacts, Fishing Industry Association contacts

and provides resources to understand the boundaries of commonwealth fisheries to support understanding of potentially impacted fisheries.

Recently, representative bodies have begun to provide consultation services to support petroleum industry in contacting and collecting responses on Environmental Plans (and other) consultation. Where engaged to do so, TGPPL used these services and worked with the representative body to confirm information provided was consistent with the information package provided in Appendix C. This included contact information to provide the opportunity for members to self-identify to TGPPL if this was preferred.

As the bodies do not represent all fisheries, there was also additional fishery associations or groups identified from the geographical boundaries found using the AFMA and search tools, for example in Victoria the Abalone Council Victoria (ACV) is not represented by Seafood Industry Victoria (SIV). In the South-East area, rock lobster, shark, tuna and abalone were some of the fishery types that were considered separately to the State peak representative bodies and alternative relevant organisations or associations were identified and contacted.

#### 10.5.4.5 Research and Conservation Groups

Australia has many recognised non-government organisations that support and advocate for research, environment and conservation relevant to the work and activities that TGPPL have presented within this EP. These groups provide important feedback for driving social change, developing communities and advocating for rights, welfare and beliefs of the local wildlife, environment and people.

To identify relevant bodies, the local, national and global context was taken into account for the operations and activities described within the document and the values of the organisations were considered to understand if there would be interest in the operation of the TGP.

Tasmania had a useful index of NGO's that could be filtered to find environmental, conservation and animal welfare groups specifically. This resource was used to identify the relevant groups in the state. For Victoria, a broader approach was used and a search of the EMBA was done to identify local community or state-based organisations that would have interest in the TGP Operations.

Lastly, national or broader organisations were identified based on their history with interaction with oil and gas infrastructure and operations within the South-east and Bass Strait.

#### 10.5.5 Other relevant persons

TGP for this section relies on the referral from seeking nominations from previously identified relevant persons for other potentially relevant persons and self-identification through community engagement posts and other communication platforms to develop and maintain a list of other relevant persons. These persons, groups or other identified organisations will be communicated with and given the opportunity to accept or decline future engagement from TGP for consultation.

### 10.6 Consultation Approach

Consultation for the 5-yearly renewal of the TGP EP began in September 2024, using various methods, being:

- TGP website – is an online portal that gives broader groups of relevant persons information on various facets of the business and provides an opportunity for relevant persons to make enquires about offshore activities.
- Meetings – were held with relevant persons in order to enable transparent and direct feedback. This included meetings with government agencies/departments and individual relevant persons, where warranted.
- Letters and emails – were used as an initial consultation tool to introduce the Project to relevant persons and establish appropriate forms of communication. Emails may form a means of full interactive consultation if this suits the relevant person. Written communications may include formal correspondence, updates of activities and responses to issues, concerns or requests.

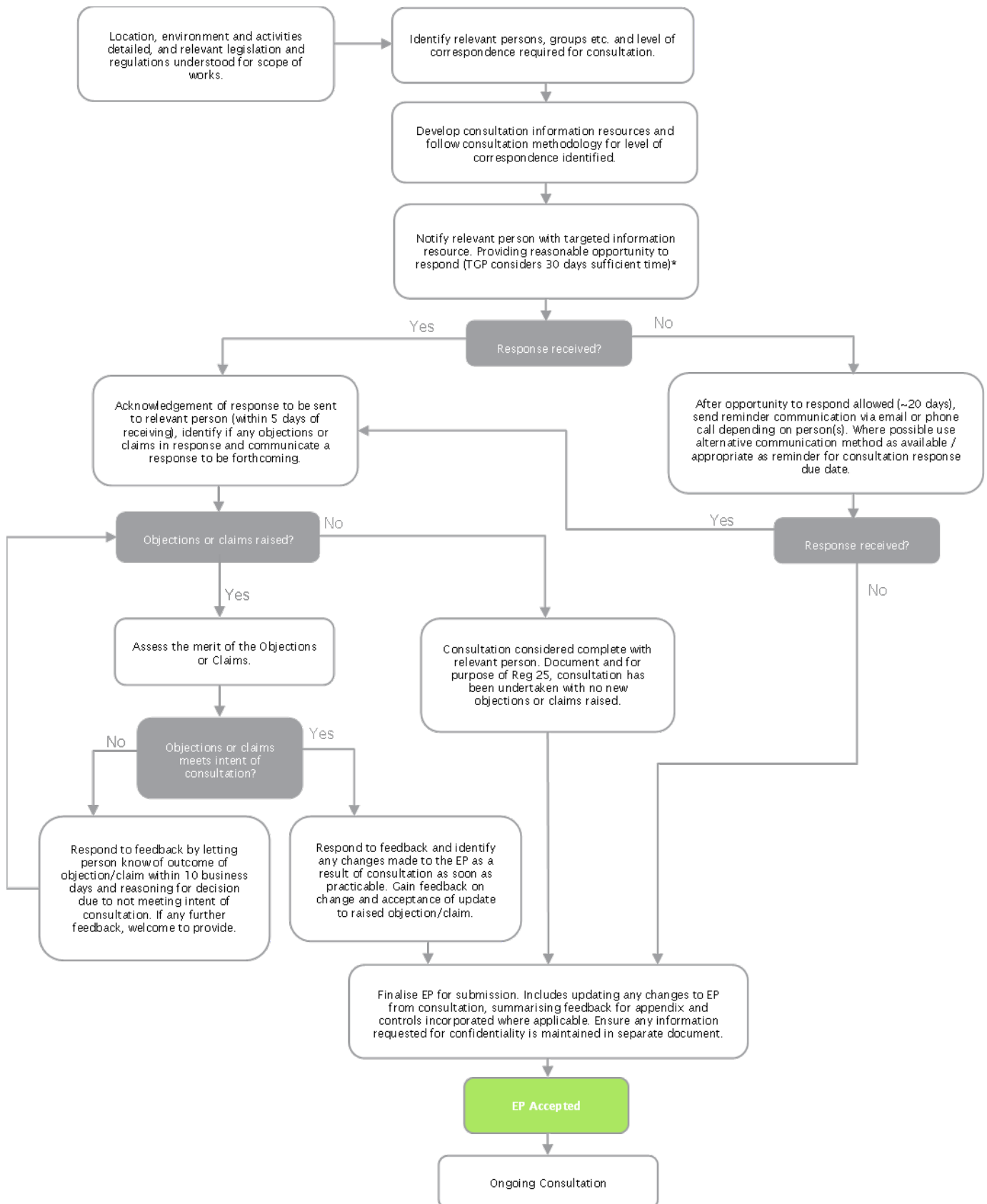
- Information sheets – were developed to inform relevant persons. Information sheets were provided in initial email consultations.
- Phone calls – if an address or email was not available for an identified relevant person, initial contact may be conducted via telephone.

Unless otherwise identified, relevant persons will be emailed the information sheet and contact information for TGPPL detailing 30 days for response as reasonable opportunity.

In the process in Figure 10-2 on the TGPPL Flowchart of the Consultation Process Description and Actions, any follow-up communication with relevant persons. This will be used as the basis of communication expectations for TGPPL to maintain integrity and transparency in its correspondence with relevant persons.

Where contact details emails were unknown, a process using the contact information on hand was followed. Often this was either through contacting through a general enquiry's website form or from a phone number where the organisation or individual was contacted to obtain the relevant person within the organisations best contact email. a phone number or enquiry form to submit to.

The groups, namely Indigenous groups and Environmental Non-Government Organisations (ENGOS) were also identified to have alternative communication follow-up to foster engagement, transparency and support communication with relevant persons with group interests to best identify if there was further need for meetings or other means of communications with the interested group members. Where possible phone communication was the preferred method to support this follow-up initial information package email.



**Figure 10-2 Flowchart of the Consultation Process Description and Actions**

\*Where relevant persons/groups identified, a follow-up will be completed within 2 weeks to confirm receipt of consultation.

## 10.7 Consulting with groups where Interests are held communally

Where interests are held communally alternative methods of consultation may be required to effectively communicate with as many individuals within the collective group as is practical. It is also important to TGPPL that the communication to all relevant persons is aligned and that the persons or groups and the nature of their interests is held in mind when disseminating the information to the group or representative bodies or corporate entities that represent the group, whilst maintaining access to the information given to all other relevant person groups.

Whilst email, mail and telephone are considered the primary communication method, TGPPL also recognises that providing of information via other methods may be required for certain groups to ensure information is conveyed and individuals or groups are presented information in a way in which it is appropriately consumable and understood.

If there are other communication strategies guided by the primary correspondent to the group, TGPPL will endeavour to support the preferred communication strategy. For example, where a Fishery Group Board representing many individuals suggests posting through their internal communication platform (newsletter, email, social media, etc.), TGPPL will provide clear information and dialogue appropriate to these communication channels and support the feedback process through these networks.

If it is found to be insufficient from initial contact and feedback from groups or individuals of groups, TGPPL will extend invitations to one-on-one or community meetings to groups and their members, such that there is appropriate representation and reasonable opportunity for members to participate in meaningful two-way dialogue.

Although applicable to other groups with communal interests, the discussion of group outreach primarily relates to First Nations groups and their members where interest in a group dialogue format is requested. With the above considered, TGPPL will also utilise the insight and advice of First Nations land councils or body corporates in relation to who and how the relevant person First Nations groups or individuals should be consulted where the above methodology is not considered appropriate or provides reasonable opportunity to these communities. As above, the primary forms of feedback will be utilised and when prompted and engaged to do so, TGPPL will follow-up with further engagement as advised.

## 10.8 Information and Consultation Period

In producing information for relevant persons and relevant persons to review and comment on during consultation, the following advice in accordance with Regulation 25 (Commonwealth) 13F (Victoria) and 14 (Tasmania) - Consultation with relevant authorities, persons and organisations, etc., the OPGGS Environmental Regulations were utilised to guide the updated information package to inform this EP revision.

The guidance is based on the Commonwealth Regulation 25 - Consultation with relevant authorities, persons and organisations, etc., refer to Table 10-1;

The information sheet provided to each relevant person is provided in Appendix D. Due to the nature of this operation being quite simple with few activities performed at low frequency, the standard consultation period of 30 business days noted across the industry has been considered as a reasonable time by TGPPL for consultation. Further to the 30 business days, an approach detailed in Figure 10-2 on follow-up with no responses, and on the handling of objections or claims is added to ensure contact has been made and the relevant person has had reasonable access to the information to make comment or provide feedback.

To align in ensuring sufficient information is provided to relevant persons, the initial information sheet included information on the activity description, scope, timing, location, risks, impacts, mitigation measures and EMBA information. The information sheet was made available to all relevant persons, with the encouragement to ask for any additional information to promote two-way dialogue and open, honest and clear communication across the process with the interested parties. TGP acknowledges that what is considered sufficient information may vary between relevant persons and as such, additional information was provided as needed.

## 10.9 Assessment of Feedback

Throughout the consultation process, all relevant persons had the opportunity to contact TGP by emailing [tgp@palisadeims.com.au](mailto:tgp@palisadeims.com.au), or [enquiries@tasmaniangaspipeline.com.au](mailto:enquiries@tasmaniangaspipeline.com.au), or calling 1300 241 820.

Using best practice industry evaluation and analysis processes, the Net Environmental Benefit Analysis (NEBA) aligned to the Risk Assessment Process will be used to respond and assess the feedback from Objections and Claims provided by relevant persons. Through using these processes, the responses will be evaluated with the balance of identifying impacts and potential risks or outcomes to environment, safety and community. The balance or trade-off for the risk of potential impact will be evaluated and where appropriate the response will demonstrate through ALARP principles, the decision for implementing or not requiring a countermeasure for the identified issue will be justified.

A summary of all responses, objections and/or claims, as well as TGP's assessment of merits and response is provided in Appendix E.

No objections or claims were received from relevant persons, either through face-to-face meetings, emails or phone requests.

TGP consider it has discharged its obligations for consultation under both the Commonwealth and State regulations, having provided a reasonable period for consultation, sufficient information and an opportunity for relevant persons to provide feedback, objections and/or claims.

## 10.10 Summary of Consultation Responses

There were limited responses to the consultation, of the responses collected there were none that required any assessment or further feedback from TGPPL, a summary can be found in Table 10-3. There were some actions raised with additional relevant persons/groups identified, they were contacted immediately and provided the same consultation content and consultation period.

A more comprehensive correspondence record is included in Appendix E.

**Table 10-3: Summary of Consultation Responses, Assessments and Actions**

| Relevant Person                                  | Feedback from Relevant Person   | Assessment   | Closed     |
|--|---|--|------------|
| Australian Fisheries Management Authority (AFMA) | Suggested additional relevant persons through AFMA consultation website: <a href="https://www.afma.gov.au/petroleum-industry-consultation-commercial-fishing-industry">https://www.afma.gov.au/petroleum-industry-consultation-commercial-fishing-industry</a> .<br><br>No problems or further questions were raised.                               | N/A<br><br><b>Action:</b> Review list of contacts from AFMA website and confirm contacted relevant. (Completed, already engaged relevant persons from list).   | 10/09/2024 |
| Australian Hydrographic Office (AHO)             | AHO have requested that future consultation be limited to activities that affect current charted detail.  | Continue consultation when activities impact current charted detail.   | 24/11/2025 |
| Australian Maritime Safety Authority (AMSA)      | A map visually representing the offshore vessel traffic around the TGP Operations was provided for reference. An update to contact details given. Ongoing consultation with respect to activities being conducted was advised and vessel collision risk raised as main area of concern, referencing the COLREGs and requirements to mitigate risks. | N/A as vessel collision addressed already with the same reference to COLREGs as per Section 6.10.4.<br><br><b>Action 1:</b> Update contact information as provided (Completed)<br><br><b>Action 2:</b> Ongoing consultation recorded in EP (Completed) | 13/11/2024 |

| Relevant Person  | Feedback from Relevant Person  | Assessment  | Closed     |
|--|--|---|------------|
| Department of the Environment and Energy - Director of National Parks  | Informed of changes to the SE Commonwealth Marine Reserve Management Plan upcoming. Advised on EP identifying marine park values, impacts and risks and addressing these (including ecosystem values). Referenced NOPSEMA Guidance Note (GN1785) with Marine Parks Australia to be followed. Updated information on emergency response request for DNP to be contacted where spill occurs within or threatens a Marine Park. | N/A<br><br><b>Action 1:</b> Reviewed the information within the EP against the Guidance Note to ensure compliance.<br><br><b>Action 2:</b> Added the DNP contact information to the OPEP if the situation arises where the spill occurs within or is likely to impact the National Park (Beagle Marine Park). | 4/11/2024  |
| Department of Environment, Land, Water and Planning (DELWP) (Victoria) | Remove the delwp.vic.gov.au email from your list, as that's a now redundant email address and department. Contact is Resources Victoria through DEECA.   | N/A,<br><br><b>Action:</b> Remove DELWP email contact information and replace with up-to-date (Complete, removed DELWP contact, appropriate email and department already identified and contacted as part of consultation - no response received)   | 18/10/2024 |
| Resources Victoria (DEECA)   | Seek to understand that the EP will be submitted to Resources Victoria at the same time as NOPSEMA.  | <b>Action 1:</b> Submit TGP EP to Resources Victoria at the same time as submission to NOPSEMA.   | 29/06/2025 |
| Agriculture Victoria (DEECA)   | Wish to be consulted.  | TGP contacted Agriculture Victoria to identify what additional information they would like to received. No response was provided.<br><br><b>Action:</b> TGP will advise Agriculture Victoria of any suspected invasive marine species identified (refer to CM57)  | 25/11/2025 |
| Department of Jobs, Skills, Industry and Regions (DJSIR)               | DJSIR have advised that Resources Victoria are better placed to consult on EP.   | Resources have been contacted (see above)   | 13/11/2025 |
| Environment Protection Authority (Victoria)                            | As it is just an update to a plan and there are no new works proposed, we are happy not to review anything at this time.   | N/A   | 2/10/2024  |
| Emergency Management Victoria  | Emergency Management Victoria have advised that DEECA are better placed to consult   | DEECA has been consulted.   | 13/11/2025 |
| Victorian Fisheries Authority  | Suggested additional relevant persons.   | N/A<br><br><b>Action:</b> Contact additional relevant persons identified (Complete, response received from SIV contact, no response from VRFish).   | 6/09/2024  |
| Mineral Resources Tasmania   | Seek to understand that the EP will be submitted to MRT at the same time as NOPSEMA.<br><br>Continue to submit monthly environmental reports.  | <b>Action 1:</b> Submit TGP EP to MRT at the same time as submission to NOPSEMA.<br><br><b>Action 2:</b> Monthly reports will be submitted in accordance with Table 8-3   |            |

| Relevant Person  | Feedback from Relevant Person  | Assessment  | Closed     |
|--|--|---|------------|
| Department of Natural Resources and Environment Tasmania - Environment, Heritage and Land Division | No issues or points of feedback have arose.  | N/A<br><b>Action:</b> A preferred email was provided, change primary contact email for relevant person (Completed)  | 14/10/2024 |
| Environment Protection Authority (Tasmania)  | No comment on EP renewal.  | N/A   | 3/10/2024  |
| Marine and Safety Tasmania   | No comment on EP renewal.  | N/A   | 3/10/2024  |
| Eastern Tuna and Billfish Fishery (ETBF)   | Reviewed and decided activities were low risk to the tuna fishing industry. Wanted to emphasise importance and value of SBT and ETBF species in the region, and BIA's in the Bass Strait, and how these have strong potential to interact with any energy exploitation-related activities. Welcomes further dialogue to deconflict any issues before they arise.<br>Also suggested another relevant person (Australian Bluefin Tuna Industry Association). | No further assessment required, concerns raised already discussed in EP when discussing the potential risks and control measures for protection of marine fauna, marine environment and protection of other marine users (Section 6.2, 6.3, and 6.4 respectively).<br><b>Action 1:</b> continuous dialogue with ETBF, particularly notification of activities where there is potential concurrent survey/maintenance work and fishing activities where vessels are likely to have close contact (referenced as Advance notice through the "48 hour look ahead" process implemented by some contracted oil and gas marine assets is acceptable and appreciated.) (CM11)<br><b>Action 2:</b> Also consult with Australian Southern Bluefin Tuna Industry Association (complete already identified as relevant person/group) | 25/10/2024 |
| South East Trawl Fishing Industry Association (SETFIA)   | No comment on EP renewal.  | N/A   | 4/09/2024  |
| Seafood Industry Victoria (SIV)  | Supported consultation with members, no feedback or responses given.   | N/A   |            |
| Gippsland Ports  | TGPPL does not impact Gippsland Ports Waters.  | N/A   | 4/09/2024  |
| APA Group - BassLink   | No comments at this time.  | N/A   | 21/10/2024 |
| Southerly Ten  | Request was made for ongoing communications during Southerly Ten's construction phase.   | <b>Action:</b> Contact details provided   | 24/11/2025 |
| Australian Marine Oil Spill Centre (AMOSC)   | Requested information on emergency response as detailed in the EP.<br>AMOSC advised that AMOSC's services and equipment are only available to non-members upon contract approval.  | <b>Action 1:</b> Information sent 29-10-25<br><b>Action 2:</b> As part of the TGP OPEP testing arrangements, non-member status will be reviewed prior to commencing works. Table 9-2 updated to reflect.  | 24/11/2025 |

| Relevant Person              | Feedback from Relevant Person   | Assessment   | Closed     |
|------------------------------|---|--|------------|
| Committee for Gippsland      | Requested a meeting.<br><br>No comments or action arose from meeting or consultation. | <b>Action 1:</b> Meeting held 31/10/2025                     | 31/10/2025 |
| Australian Wildcatch Fishing | Advised that TGP should consult with SETFIA.  | <b>Action:</b> TGP have undertaken consultation with SETFIA. | 13/11/2025 |

## 10.11 Ongoing Consultation

As the TGP operator, TGPPL undertakes environmental consultation on an as-needs basis. TGPPL has developed the TGP *Consultation Plan* (TGP-698-PA-GEN-001) to regularly assess relevant person expectations and answer enquiries as they arise. The TGP Consultation Plan outlines the key resources, issues, messages and strategies for communication with those individuals and groups (relevant persons) who have a vested interest in the TGP.

The purpose of the TGP Consultation Plan is to:

- Keep key relevant persons up to date with TGP activities
- Ensure timely response to relevant person issues; and
- Maintain dialogue with regulatory authorities
- Review responses from relevant persons in Appendix E – Ongoing Consultation – and maintain correspondence as requested.

Records of ongoing relevant person consultation are maintained in TGPPL’s electronic Document Management System (eDMS). Any changes to the activity that could result in a change to the interests, functions, or activities to relevant persons will be subject to TGPPL’s Management of Change process (Section 8.2.1) in order to determine if relevant persons and potential relevant persons would be significantly affected by the change. If so, additional information will be provided to relevant persons and any potential relevant person for the purpose of seeking feedback on the proposed changes. Additional triggered consultation actions are provided in Table 10-4.

A diverse range of relevant persons has been identified as having potential interest in the management of operations along the TGP. Appendix E identifies the relevant persons that have been consulted with respect to the TGP and groups them into broad categories reflecting the Regulations and their differing interests.

Where relevant persons have requested information to be shared prior to activities, this will be noted and the organisations will be contacted accordingly. The relevant persons identified through the process will be maintained unless requested otherwise for future engagement where consultation is required.

**Table 10-4: Triggered Consultation Actions**

| Trigger   | Action   |
|---|--|
| Feedback received from Relevant Person.   | Follow consultative process outlined in of the TGP Consultation Plan (TGP-698-PA-GEN-001) to understand if a revision to the EP is required. |
| Meeting with relevant person identifies new information not currently addressed in EP | Follow TGP Management of Change process to identify if a change to the EP is required.<br>Log correspondence.                                |

| Trigger  | Action  |
|--|---|
| Deviation to TGP activities from those originally provided in consultation | Notification of relevant persons via email.<br>Deviation will be assessed through the Management of Change process to understand if any additional relevant persons need to be notified.                          |
| Change to risk profile in OA and/or EMBA                                   | Deviation will be assessed through the Management of Change process to understand if any additional relevant persons need to be notified and if change triggers a resubmission of the EP to NOPSEMA, MRT and ERR. |

## 10.12 Reporting

In accordance with State and Commonwealth legislative requirements (refer to Section 10.2), TGP has included in this EP reports on all consultations undertaken with any relevant person identified in this EP.

A summary report on all consultations undertaken up to the date of submission of this EP is included in Appendix E.

Sensitive information relating to relevant persons and the full text of any response by a relevant person in the course of preparing this EP, is provided to the Minister as a separate attachment.

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## Appendix A TGP Regulatory Requirements Summary

## A-1 International Agreements

| Legislation  | Summary of Relevance  | Application to TGP Personnel                      |
|--|---|---|
| International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) | International marine environmental convention designed to minimise pollution of the seas including oil and exhaust pollution, sewage, garbage, air pollution and noxious liquid substances carried in bulk. Australia is a signatory to this convention and as such, is responsible for certifying compliance with MARPOL's pollution prevention standards for Australian registered ships. Requirements of the convention are managed by the Australian Maritime Safety Authority and implemented under Commonwealth legislation including Protection of the Sea (Prevention of Pollution from Ships) 1983 and state legislation including the Pollution of waters by Oils and Noxious Substances Act 1986 (Vic) and Pollution of Waters by Oil and Noxious Substances Act 1987 (Tas). | Offshore operations are to meet MARPOL standards. |

## A-2 Commonwealth Legislation

| Legislation  | Summary of Relevance  | Application to TGP Personnel  |
|--|---|---|
| Aboriginal and Torres Strait Islander Heritage Protection Act 1984 | Enables the Commonwealth government to preserve and protect areas or objects that are of particular significance to Aboriginal and Torres Strait Islander People. The Act protects areas on land and within Australian waters and enables the Minister for the Environment and Water to make a declaration to protect an area or object of significance from a threat of injury or desecration. | Currently, no aboriginal areas/objects have been identified along the pipeline route, however; if any objects/areas are discovered the requirements of the Act are to be implemented. |
| Australian Heritage Council Act 2003                               | This Act identifies areas of heritage value listed on the Register of the National Estate and sets up the Australian Heritage Council and its functions.  | Currently, no heritage areas have been identified along the pipeline route, however; if any areas are discovered the requirements of the Act are to be implemented.                   |
| Australian Maritime Safety Authority Act 1990                      | Is the primary legislation governing the Australian Maritime Safety Authority. The acts objectives are to combat pollution in the marine environment.   | Oil spill response arrangements and reporting requirements are to comply with the Act.  |

| Legislation   | Summary of Relevance  | Application to TGP Personnel   |
|---|---|--|
| Australian Ballast Water Management Requirements 2020   | Provides a comprehensive guide to vessel operators to manage ballast water effectively. These requirements are aligned with the International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004 and are part of the Biosecurity Act 2015.  | Vessels used by TGP will comply with the requirements of this Act.   |
| Biosecurity Act 2015<br>Biosecurity Regulations 2016  | From 16 June 2016, the Biosecurity Act 2015 (Biosecurity Act) replaces the Quarantine Act 1908 as Australia's primary piece of legislation used to manage the biosecurity threats to plant, animal and human health in Australia and its external territories. In the context of this EP, the main threat is posed by ballast water and sediments. For the petroleum industry, it regulates the condition of vessels and drill rigs entering Australian waters with regard to ballast water and hull fouling. The regulation stipulates that all information regarding the voyage of the vessel and the ballast water is declared correctly to the biosecurity officers. The survey and support vessels will adhere to biosecurity guidelines regarding biosecurity clearance to enter Australian ports and Territorial waters.   | Offshore operations are to meet the requirements of the Biosecurity Act and Regulations.   |
| Biosecurity Amendment (Ballast Water and Other Measures) Act 2017   | This act aims to manage the risk of invasive marine pests entering Australian waters and includes provision for reporting intended or actual discharges of ballast water in Australian territorial seas.  | Vessels used by TGP will comply with the requirements of this Act.   |
| Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)<br>Environment Protection and Biodiversity Conservation Regulations 2000 | Key Environmental Legislation in Australia. Identifies, protects and provides a management framework for matters of national environmental significance. These include: World Heritage properties; national heritage places; wetlands of international importance (Ramsar wetlands); threatened species (flora and fauna) and ecological communities; migratory species and Commonwealth marine areas. Outlines offences under the act – Specifically, it is an offence to take, kill, injure, move, trade or keep a member of a listed Commonwealth species or ecological community or knowingly damage any part of a critical habitat (those listed above). Note: The Act does not explicitly regulate shipping operations, but it has jurisdiction over certain shipping activities, particularly in relation to actions that are likely to have a significant impact on a matter of national environmental significance. The jurisdiction mainly relates to actions or omissions in the operation of ships that damage, or are likely to damage, the marine environment and includes a regulatory power for controlling non-native species that could be introduced via shipping. | Any encounters with matters of environmental significance must adhere to requirements of this Act. Environmental incidents require reporting under this Act. |
| Environment Protection (Sea Dumping) Act 1981<br>Environment Protection (Sea Dumping) Regulations 1983  | Regulates the dumping at sea of controlled material (including certain wastes and other matter), the incineration at sea of controlled material, loading for the purpose of dumping or incineration, export for the purpose of dumping or incineration, and the placement of artificial reefs. These activities are prohibited unless a special permit has been granted. The Act gives effect to Australia's obligations under the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 to prevent marine pollution by dumping of wastes and other matter. (thereby also fulfilling Australia's international obligations under the London Convention).  | TGP operations are to adhere to requirements of this Act.  |

| Legislation  | Summary of Relevance   | Application to TGP Personnel   |
|--|--|--|
| National Environment Protection Council Act 1994   | The Council develops (in conjunction with other State authorities through the Intergovernmental Agreement on the Environment) consistent environmental standards to be adopted between states. These requirements take the form of a National Environmental Protection Measure (NEPM) and include the National Pollutant Inventory.  | TGP operations are to adhere to requirements of this Act.  |
| National Greenhouse and Energy Reporting Act 2007  | Introduces a single national reporting framework for the reporting and dissemination of information about greenhouse gas emissions, greenhouse gas projects and energy use and the production of corporations.   | TGP operations are to adhere to requirements of this Act.  |
| Navigation Act 2012<br>Navigation Regulations 2023   | This Act regulates ship-related activities in Australian waters, including elements of a number of international agreements such as the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) relating to equipment and construction of ships. As the inspection and maintenance activity is a vessel-based survey in Australian waters, it is subject to the Act.  | TGP operations are to adhere to requirements of this Act.  |
| Offshore Petroleum and Greenhouse Gas Storage Act 2006   | Offshore petroleum operations beyond the three nautical mile limit are governed by this Act. The Act sets out a basic framework of rights, entitlements and responsibilities for governments and industry. The legislation allows for five types of title to be granted: exploration permits, retention leases, production licenses, pipelines licenses and infrastructure licenses. The Act is supported by regulations and directions covering environmental management (see below).                                     | TGP operations are to adhere to requirements of this Act.  |
| Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (OPGGS Regulations) | These regulations ensure that any petroleum activity is consistent with principles of ecologically sustainable development and in accordance with an environment plan that has appropriate environmental performance objectives and standards as well as measurement criteria for determining whether those objectives and standards are met. Specifically, the regulations outline the requirements of Environment Plans, revisions, incident reporting requirements and outlines records to be kept.                     | The EP must adhere to EP requirements under the regulations. Incident reporting is required under these regulations. |
| Ozone Protection and Synthetic Greenhouse Gas Management Act 1989                                | Regulates the manufacture, importation and use of ozone depleting substances (typically used in fire-fighting equipment and refrigerants). Applicable to the handling of any ozone depleting substances.   | TGP operations are to adhere to requirements of this Act.  |
| Protection of the Sea (Harmful Antifouling Systems) Act 2006                                     | This Act regulates the use of antifouling compounds and systems in Australian waters. Vessels will be required to have a hull antifouling system in place and will be subject to this Act, in particular Part 2 Application or use of a harmful antifouling system and Part 3 Antifouling certificates and antifouling declarations. Amendments made in the Maritime Legislation Amendment Act 2022 will also be applicable with the extended controls on harmful antifouling chemical biocide, cybutryne from Jan 1 2023. | TGP operations are to adhere to requirements of this Act.  |

| Legislation  | Summary of Relevance  | Application to TGP Personnel  |
|--|---|---|
| <p>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</p> <p>Protection of the Sea (Prevention of Pollution from Ships) (Orders) Regulations 1994</p> | <p>Act to prevent pollution of air and water by oil, noxious and harmful substances including sewerage and garbage. Prohibits discharge of substances into Australian waters, carriage of certain substances and requirements for onboard emergency plans including oil spills and noxious liquid pollution. Also outlines requirements to retain reports on incidents involving oil spills. Also contains previously mentioned amendments from Maritime Legislation Amendment Act 2022.</p>  | <p>Operations to adhere to requirements of this Act.</p>  |
| <p>Protection of the Sea (Powers of Intervention Act) 1981</p>   | <p>This Act gives AMSA appropriate powers to intervene in shipping operations to protect the sea from pollution by oil and other noxious substances discharged from ships.</p>  | <p>TGP operations are to adhere to requirements of this Act.</p>  |
| <p>Protection of the Sea (Civil Liability for Bunker Oil Pollution Damage) Act 2008</p>  | <p>Sets up a compensation scheme for those who suffer damage caused by spills of oil that is carried as fuel in ships' bunkers. There is an obligation on ships over 1,000 gross tonnage to carry insurance certificates when leaving/entering Australian ports or leaving/entering an offshore facility within Australian coastal waters. The vessels undertaking inspection and maintenance activities will hold the necessary insurance certificates.</p>  | <p>TGP operations are to adhere to requirements of this Act.</p>  |
| <p>Protection of the Sea (Shipping Levy) Act 1981</p>  | <p>Provides that where, at any time during a quarter when a ship with tonnage length of no less than 24 m was in an Australia port, there was on board the ship a quantity of oil in bulk weighing more than 10 t, a levy is imposed in respect of the ship for the quarter. The survey and support vessels will adhere to the shipping levy.</p>   | <p>TGP operations are to adhere to requirements of this Act.</p>  |
| <p>Submarine Cables and Pipelines Protection Act 1963</p>  | <p>This Act applies to submarine cables or pipelines beneath the high seas or in the exclusive economic zone. It prevents persons from breaking, injuring, interrupting or obstructing submarine pipelines.</p>   | <p>If damage occurs to the pipeline, offences and liabilities implemented as outlined in the Act.</p>   |
| <p>Underwater Cultural Heritage Act 2018</p>   | <p>Protects historic shipwrecks, sunken aircraft, and associated relics and provides for the establishment of protected zones around historic shipwrecks and sunken aircraft in Commonwealth waters. Specifically, all shipwrecks and associated relics more than 75 years old are protected under the Act. A wreck less than 75 years old may also be protected by a special declaration of the Minister. It is an offence to destroy or cause damage to an historic shipwreck or relic, cause interference with an historic shipwreck, sunken aircraft, or relic, cause the disposal of an historic shipwreck, sunken aircraft or relic, or cause an historic shipwreck, sunken aircraft or relic to be removed from Australia. Each of the States has complementary legislation, which protects historic shipwrecks and sunken aircraft in State waters.</p> | <p>Currently, no shipwrecks or sunken aircraft have been identified along the pipeline route, however; if any are discovered the requirements of the Act are to be implemented.</p> |

## A-3 Victorian Legislation

| Legislation   | Summary of Relevance   | Application to TGP Personnel  |
|---|--|---|
| <p>Aboriginal Heritage Act 2006</p> <p>Aboriginal Heritage Amendment Act 2016</p> <p>Aboriginal Heritage Regulations 2018</p> | <p>Enables the protection, preservation and management of Victoria’s aboriginal heritage (including places, objects and human remains) through an Advisory Council and Registered Aboriginal Parties which represent Aboriginal people.</p> <p>The amendment act improves reporting requirements for Aboriginal cultural heritage and introduces provisions for Aboriginal intangible heritage.</p> <p>The regulations, principally, define high impact activities and areas of cultural heritage sensitivity.</p>   | <p>Currently, no aboriginal areas/objects have been identified along the pipeline route, however; if areas or objects are discovered the requirements of the Act are to be implemented.</p> |
| <p>Dangerous Goods Act 1985</p> <p>Dangerous Goods (Storage and Handling) Regulations 2022</p>                                | <p>The act and regulations aim to protect the public, property and the environment from the risks associated with dangerous goods and explosives. It sets out a framework for the safe handling, storage, and transportation of these materials.</p>   | <p>TGP operations are to adhere to requirements of this Act.</p>  |
| <p>Emergency Management Act 2013</p> <p>Emergency Management Regulations 2003</p>   | <p>Provides for the establishment of governance arrangements for emergency management in Victoria, including the Office of the Emergency Management Commissioner and an Inspector General for Emergency Management. Provides for integrated and comprehensive prevention, response and recovery planning, involving preparedness, operational co-ordination and community participation, in relation to all hazards. These arrangements are outlined in the Emergency Management Manual Victoria. Administered by the Department of Justice and Regulation (Inspector General for Emergency Management).</p> | <p>TGP operations are to adhere to requirements of this Act.</p>  |
| <p>Environment Protection Act 2017</p> <p>Environment Protection Regulations 2021</p>   | <p>Sets out the legislative framework for protecting human health and the environment from pollution and waste in Victoria. This is achieved through the establishment of principles of environment protection, developing Environment Reference Standard and a waste management framework.</p> <p>All activities conducted in Victoria are required to reduce their human and environmental health risks by taking all reasonable and practical steps.</p>  | <p>Pollution management guidelines are to adhere to requirements of the Act. Environmental Pollution is to be reported to EPA’s general hotline: 1300 372 842</p>                           |

| Legislation   | Summary of Relevance  | Application to TGP Personnel  |
|---|---|---|
| <p>Flora and Fauna Guarantee Act 1988</p> <p>Flora and Fauna Guarantee Regulations 2000</p>   | <p>Key flora and fauna legislation in Victoria. Establishes a legal and administrative structure to enable and promote the conservation of Victoria's native flora and fauna. It also provides procedures which can be used for the conservation, management or control of flora and fauna and the management of potentially threatening processes. This Act also establishes the Scientific Advisory Committee provides the lists of threatened species and their status in Victoria, and advises the Minister of new/potential listings</p> | <p>Any encounters with threatened flora and fauna should adhere to requirements of the Act.</p> <p>Currently, no threatened flora species have been identified in the state marine environment. Impacts to threaten flora will be managed in accordance with the Act.</p> |
| <p>Heritage Act 2017</p> <p>Heritage Amendment Act 2023</p> <p>Heritage Regulations 2017</p> <p>Heritage (Underwater Cultural Heritage) Regulations 2017</p> <p>Heritage (Historic Shipwrecks) Regulations 2007</p> | <p>Protects and conserves places and objects of cultural heritage significance through the Heritage Council and Victorian Heritage Register. Outlines offences, specifically, it is an offence to damage or remove a cultural object or place.</p>  | <p>Currently, no heritage areas/objects have been identified along the pipeline route, however; if any areas/objects are discovered the requirements of the Act are to be implemented.</p>  |
| <p>Marine (Drug, Alcohol and Marine Pollution) Act 1988</p> <p>Marine (Drug, Alcohol and Marine Pollution) Regulations 2022</p> <p>Marine (Drug, Alcohol and Marine Pollution) Amendment Regulations 2017</p>       | <p>Manages pollution of State waters, implements International marine conventions and provides a framework for safe operation of vessels in State Waters.</p>   | <p>All offshore vessels are to adhere to requirements of the Act.</p>   |

| Legislation  | Summary of Relevance  | Application to TGP Personnel  |
|--|---|---|
| Marine and Coastal Act 2018                                    | The objectives of this Act include the planning and management of the use of Victorian coastal resources on a sustainable basis for recreation, conservation, tourism, commerce and similar uses; protecting and maintaining areas of environmental significance on the coast; and maintaining and improving coastal water quality. This is achieved via the implementation of Coastal Management plans to guide planning and management at a regional level. Under this legislation a person must not use or develop coastal Crown land unless the written consent of the Minister has first been obtained. Coastal crown land also includes marine environments from shore to 3 NM including the seabed.  | Currently, TGPPL have no plans for any further projects within coastal area, however; if any projects are considered the requirements of the Act are to be implemented.   |
| Marine Safety Act 2010<br>Marine Safety Regulations 2023       | This Act provides for safe marine operations in Victoria, including imposing safety duties on owners, managers and designers of vessels, marine infrastructure and marine safety equipment; marine safety workers, masters and passengers on vessels; regulation and management of vessel use and navigation in Victorian State waters; and enforcement provisions of Police Officers and the Victorian Director of Transport Safety. This Act reflects the requirements of international conventions – Convention on the International Regulations for Preventing Collisions at Sea and the International Convention for the Safety of Life at Sea. The Act also defines marine incidents and the reporting of such incidents to the Victorian Director of Transport Safety. Administered by Maritime Safety Victoria. | All offshore vessels are to adhere to requirements of the Act.  |
| National Parks Act 1975  | Established a number of different types of reserve areas onshore and offshore, including Marine National Parks and Marine Sanctuaries. A lease, licence or permit under the OPGGS Act that is either wholly or partly over land in a marine national park or marine sanctuary is subject to the National Parks Act 1975 and activities within these areas require Ministerial consent before activities are carried out. Administered by the DELWP.   | Currently, TGPPL have no plans for any further projects within National Parks, however; if any projects are considered the requirements of the Act are to be implemented. |
| Offshore Petroleum and Greenhouse Gas Storage Act 2010         | A framework for regulating petroleum exploration and recovery activities and petroleum facilities in Victorian Waters including: construction and operation of infrastructure facilities relating to petroleum or greenhouse gas substances; and construction and operation of pipelines for conveying petroleum or greenhouse gas substances.  | Operations to adhere to requirements of the Act.  |
| Offshore Petroleum and Greenhouse Gas Storage Regulations 2021 | Provide a framework for the elimination and minimisation, so far as is practicable, of the environmental, health and safety hazards and risks involved in undertaking petroleum and greenhouse gas activities. Specifically, the regulations outline the requirements of Environment Plans, revisions, incident reporting requirements and outlines records to be kept.   | The EP must adhere to EP requirements under the regulations. Incident reporting is required under these regulations.  |

| Legislation   | Summary of Relevance  | Application to TGP Personnel  |
|---|---|---|
| <p>Pollution of Waters by Oils and Noxious Substances Act 1986</p> <p>Pollution of Waters by Oils and Noxious Substances Regulations 2022</p> | <p>The purpose of this Act is to make certain provisions for the protection of the sea and certain waters from pollution by oil and other noxious substances and to implement the MARPOL Convention. This Act is jointly administered by EPA and the Department of Transport.</p>     | <p>TGP operations are to adhere to requirements of this Act.</p>  |
| <p>State Environment Protection Policy (Waters of Victoria) 2003</p>  | <p>Sets a framework to protect, rehabilitate and ultimately sustain the environmental quality of Victoria's streams, lakes, estuaries, and marine environments and the uses of those environments. Provides clear guidance on how to protect waterways.</p>                           | <p>Refer to policy for waterway management guidelines. Environmental Pollution is to be reported to EPA's general hotline: 1300 372 842</p> |
| <p>Wildlife Act 1975</p> <p>Wildlife Regulations 2024</p> <p>Wildlife (Marine Mammals) Regulations 2019</p>                                   | <p>Establishes a framework to protect and conserve wildlife including extinction prevention and sustainable use of. It prohibits and regulates the conduct of persons engaged in activities concerning or related to wildlife, making it an offence to harm wildlife in Victoria.</p> | <p>Any encounters with, or activities that may impact on wildlife must adhere to requirements of this Act (unless exclusions apply).</p>    |

## A-4 Tasmanian Legislation

| Legislation   | Summary of Relevance  | Application to TGP Personnel  |
|---|---|---|
| Aboriginal Relics Act 1975                              | Protects and provides management guidelines for Aboriginal “relics”, “protected objects” and “protected sites”. Outlines that it is an offence for any person (including government agencies) to damage, destroy, conceal, deface or otherwise interfere with a relic, object or a protected site.                                  | Currently, no aboriginal relics/objects/sites have been identified along the pipeline route, however; if any of the above are discovered the requirements of the Act are to be implemented. |
| Emergency Management Act 2006                           | This Act provides for the protection of life, property and the environment in a declared State emergency by outlining prevention, preparedness, response and recovery procedures. Administered by the Tasmania State Emergency Service.   | TGP operations are to adhere to requirements of this Act.   |
| Environmental Management and Pollution Control Act 1994 | Key environmental management legislation in Tasmania. Provides a framework for prevention, reduction and remediation of environmental harm from pollution and waste via the regulator - the Environment Protection Agency. Associated Environment Protection Policies guide specific areas of environmental management (see below). | All Environmental Management activities are to adhere to this Act. Incident reporting is required under this Act.   |
| Historic Cultural Heritage Act 1995                     | Protects listed heritage places, making it an offence to carry out works on a listed heritage place without approval of the Tasmanian Heritage Council (or the local council, if the Heritage Council has delegated its powers).  | Currently, no cultural heritage places have been identified along the pipeline route, however; if places are discovered the requirements of the Act are to be implemented.                  |
| Nature Conservation Act 2002                            | This Act makes provisions with respect to the conservation and protection of the fauna, flora and geological diversity of the State, to provide for the declaration of national parks and other reserved land and for related purposes.   | TGP operations are to adhere to requirements of this Act.   |
| National Parks and Reserves Management Act 2002         | This Act provides for the management of national parks and other reserved land. The act repeals the National Parks and Wildlife Act 1970 and related Acts and for related purposes  | TGP operations are to adhere to requirements of this Act.   |
| Petroleum (Submerged Lands) Act 1982                    | This Act makes provisions with respect to certain offshore petroleum activities adjacent to the coast of the State of Tasmania and to provide for related matters (refer below regulations).  | TGP operations are to adhere to requirements of this Act.   |

| Legislation  | Summary of Relevance  | Application to TGP Personnel   |
|--|---|--|
| Petroleum (Submerged Lands) (Management of Environment) Regulations 2012 | Provide administrative guidelines for environment management of petroleum activities. Specifically, the regulations outline the conducting in a manner that is consistent with the principals of ecologically sustainable development, requirements of the Environment Plans, revisions, incident reporting requirements and outlines records to be kept. | The EP must adhere to EP requirements under the regulations. Incident reporting is required under these regulations. |
| Marine-related Incidents (MARPOL Implementation) Act 2020                | Protects Tasmanian waters from discharges of oil from ships and other matters that occur within Tasmania's jurisdiction. It also gives effect in Tasmania to the international MARPOL convention on marine pollution.   | TGP operations are to adhere to requirements of this Act.  |
| State Policy on Water Quality Management (1997)                          | The State Policy on Water Quality Management (1997), also known as the Water Quality Policy, provides a framework for the development of ambient water quality objectives and the management and regulation of point and diffuse sources of emissions to surface waters (including coastal waters) and groundwater.                                       | TGP operations are to adhere to requirements of this Act.  |
| Threatened Species Protection Act 1995                                   | Aims to protect, manage and promote conservation of threatened plants and animals in Tasmania. Sets out special protection measures for native animals and plants that are considered to be 'threatened'.   | When encountering threatened plants or animals, personnel must adhere to the requirements of this Act.               |
| Whales Protection Act 1988   | Protection of whales in Tasmanian waters. Outlines offences if persons harm, take or remove a whale.  | If any whales are encountered, personnel are to adhere to requirements of this Act.                                  |

## A-5 Key Guidance Material

| Guidance  | Coverage  | Authority  |
|---|---|--|
| Environment Plan Content Requirement (N 04750-GN1344 A339814) 2020                              | Interprets the EP content requirements of the Commonwealth OPGGS (Environment) Regulations 2009, providing guidance appropriate for EPs developed for the purpose of Victorian OPGGS Regulations.                               | NOPSEMA  |
| Consultation in the Course of Preparing an Environment Plan (N-04750-GL2086 A900179) 2022       | Provides clarity and transparency on the legal requirements, including recent case law, for consultation by titleholders in the course of preparing Environment Plans.  | NOPSEMA  |
| Environment Plan Decision Making (N-04750 GL1721 A524696) 2022                                  | Provides clarity on the decision making process adopted by NOPSEMA to review and assess Environment Plans.  | NOPSEMA  |
| ALARP (N-04300-GN0166 A138249) 2022   | Details the ALARP process   | NOPSEMA  |
| Australian Ballast Water Management Requirements  | Sets out the obligations on vessel operators with regards to the management of ballast water and ballast tank sediment when operating within Australian seas.   | Department of Agriculture, Fisheries and Forestry (DAFF) |
| National Biofouling Management Guidelines for the Petroleum Production and Exploration Industry | Provides recommendations for the management of biofouling hazards by the petroleum industry, which includes but is not limited to vessels, equipment and infrastructure.  | DAFF   |
| Recovery Plan for the Grey Nurse Shark  | The plan considers the conservation requirements of the species across its range and identifies the actions to be taken to ensure the species' long-term viability in nature and the parties that will undertake those actions. | DCCEEW   |
| Recovery Plan for the White Shark   | The plan sets out the research and management actions necessary to stop the decline of, and support the recovery of, the white shark in Australian waters.  | DCCEEW   |
| Recovery Plan for Marine Turtles in Australia   | The plan considers the conservation requirements of the species across their range and identifies the actions to be taken to ensure the species long-term viability in nature, and the mechanisms to undertake those actions.   | DCCEEW   |
| National Recovery Plan for Australian Grayling  | The plan details the species' distribution and biology, conservation status, threats, and recovery objectives and actions necessary to ensure the long-term survival of the Australian Grayling.                                | DCCEEW   |

| Guidance  | Coverage  | Authority |
|---|---|-----------|
| National Recovery Plan for the Dwarf Galaxias                 | The plan details the species' distribution, habitat, conservation status, threats, and recovery objectives and actions necessary to ensure its long-term survival.  | DCCEEW    |
| National Recovery Plan for Threatened Albatrosses and Petrels | The plan aims to ensure the long-term survival and recovery of albatross and petrel populations breeding and foraging in Australian jurisdiction by reducing or eliminating human related threats at sea and on land. | DCCEEW    |

## Appendix B TGP EMBA Protected Matters MNES Report



Australian Government

Department of Climate Change, Energy,  
the Environment and Water

# EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 04-Sep-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

# Summary

## Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

|   |      |
|---|------|
| <a href="#">World Heritage Properties:</a>                    | None |
| <a href="#">National Heritage Places:</a>                     | None |
| <a href="#">Wetlands of International Importance (Ramsar)</a> | 6    |
| <a href="#">Great Barrier Reef Marine Park:</a>               | None |
| <a href="#">Commonwealth Marine Area:</a>                     | 2    |
| <a href="#">Listed Threatened Ecological Communities:</a>     | 13   |
| <a href="#">Listed Threatened Species:</a>                    | 151  |
| <a href="#">Listed Migratory Species:</a>                     | 77   |

## Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

|   |      |
|---|------|
| <a href="#">Commonwealth Lands:</a>                                 | 101  |
| <a href="#">Commonwealth Heritage Places:</a>                       | 4    |
| <a href="#">Listed Marine Species:</a>                              | 121  |
| <a href="#">Whales and Other Cetaceans:</a>                         | 29   |
| <a href="#">Critical Habitats:</a>                                  | None |
| <a href="#">Commonwealth Reserves Terrestrial:</a>                  | None |
| <a href="#">Australian Marine Parks:</a>                            | 1    |
| <a href="#">Habitat Critical to the Survival of Marine Turtles:</a> | None |

## Extra Information

This part of the report provides information that may also be relevant to the area you have

|   |      |
|---|------|
| <a href="#">State and Territory Reserves:</a>           | 315  |
| <a href="#">Regional Forest Agreements:</a>             | 2    |
| <a href="#">Nationally Important Wetlands:</a>          | 30   |
| <a href="#">EPBC Act Referrals:</a>                     | 168  |
| <a href="#">Key Ecological Features (Marine):</a>       | 1    |
| <a href="#">Biologically Important Areas:</a>           | 23   |
| <a href="#">Bioregional Assessments:</a>                | 1    |
| <a href="#">Geological and Bioregional Assessments:</a> | None |

# Details

## Matters of National Environmental Significance

### Wetlands of International Importance (Ramsar Wetlands) [\[ Resource Information \]](#)

| Ramsar Site Name                                      | Proximity                  |
|---|----------------------------|
| <a href="#">Corner inlet</a>                          | Within Ramsar site         |
| <a href="#">East coast cape barren island lagoons</a> | Within 10km of Ramsar site |
| <a href="#">Flood plain lower ringarooma river</a>    | Within Ramsar site         |
| <a href="#">Gippsland lakes</a>                       | Within Ramsar site         |
| <a href="#">Little waterhouse lake</a>                | Within Ramsar site         |
| <a href="#">Logan lagoon</a>                          | Within 10km of Ramsar site |

### Commonwealth Marine Area [\[ Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

| Feature Name                         |
|--------------------------------------|
| Commonwealth Marine Areas (EPBC Act) |
| Commonwealth Marine Areas (EPBC Act) |

### Listed Threatened Ecological Communities [\[ Resource Information \]](#)

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

| Community Name  | Threatened Category   | Presence Text                         |
|---|-----------------------|---------------------------------------|
| <a href="#">Alpine Sphagnum Bogs and Associated Fens</a>  | Endangered            | Community known to occur within area  |
| <a href="#">Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community</a> | Endangered            | Community likely to occur within area |
| <a href="#">Giant Kelp Marine Forests of South East Australia</a>   | Endangered            | Community likely to occur within area |
| <a href="#">Gippsland Red Gum (Eucalyptus tereticornis subsp. mediana) Grassy</a>   | Critically Endangered | Community likely to occur within area |

| Community Name   | Threatened Category   | Presence Text                         |
|--|-----------------------|---------------------------------------|
| <a href="#">Woodland and Associated Native Grassland</a>   |                       |                                       |
| <a href="#">Littoral Rainforest and Coastal Vine Thickets of Eastern Australia</a>   | Critically Endangered | Community likely to occur within area |
| <a href="#">Lowland Native Grasslands of Tasmania</a>  | Critically Endangered | Community likely to occur within area |
| <a href="#">Natural Damp Grassland of the Victorian Coastal Plains</a>   | Critically Endangered | Community likely to occur within area |
| <a href="#">River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria</a>         | Critically Endangered | Community may occur within area       |
| <a href="#">Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains</a>                                  | Critically Endangered | Community likely to occur within area |
| <a href="#">Subtropical and Temperate Coastal Saltmarsh</a>  | Vulnerable            | Community likely to occur within area |
| <a href="#">Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana)</a> | Critically Endangered | Community likely to occur within area |
| <a href="#">Tasmanian white gum (Eucalyptus viminalis) wet forest</a>  | Critically Endangered | Community likely to occur within area |
| <a href="#">White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland</a>                        | Critically Endangered | Community may occur within area       |

## Listed Threatened Species [\[ Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.  
Number is the current name ID.

| Scientific Name  | Threatened Category   | Presence Text   |
|--|-----------------------|---|
| <b>BIRD</b>  |                       |   |
| <a href="#">Anthochaera phrygia</a>                                  |                       |   |
| Regent Honeyeater [82338]  | Critically Endangered | Species or species habitat known to occur within area |
| <a href="#">Aquila audax fleayi</a>                                  |                       |   |
| Tasmanian Wedge-tailed Eagle, Wedge-tailed Eagle (Tasmanian) [64435] | Endangered            | Breeding likely to occur within area                  |
| <a href="#">Ardena grisea</a>  |                       |   |
| Sooty Shearwater [82651]   | Vulnerable            | Species or species habitat may occur within area      |

| Scientific Name  | Threatened Category   | Presence Text  |
|--|-----------------------|--|
| <a href="#">Arenaria interpres</a><br>Ruddy Turnstone [872]                                    | Vulnerable            | Roosting known to occur within area                    |
| <a href="#">Botaurus poiciloptilus</a><br>Australasian Bittern [1001]                          | Endangered            | Species or species habitat known to occur within area  |
| <a href="#">Calidris acuminata</a><br>Sharp-tailed Sandpiper [874]                             | Vulnerable            | Roosting known to occur within area                    |
| <a href="#">Calidris canutus</a><br>Red Knot, Knot [855]                                       | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]                                  | Critically Endangered | Species or species habitat known to occur within area  |
| <a href="#">Calidris tenuirostris</a><br>Great Knot [862]                                      | Vulnerable            | Roosting known to occur within area                    |
| <a href="#">Callocephalon fimbriatum</a><br>Gang-gang Cockatoo [768]                           | Endangered            | Species or species habitat known to occur within area  |
| <a href="#">Calyptorhynchus lathami lathami</a><br>South-eastern Glossy Black-Cockatoo [67036] | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Ceyx azureus diemenensis</a><br>Tasmanian Azure Kingfisher [25977]                 | Endangered            | Species or species habitat known to occur within area  |
| <a href="#">Charadrius leschenaultii</a><br>Greater Sand Plover, Large Sand Plover [877]       | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Charadrius mongolus</a><br>Lesser Sand Plover, Mongolian Plover [879]              | Endangered            | Roosting known to occur within area                    |
| <a href="#">Climacteris picumnus victoriae</a><br>Brown Treecreeper (south-eastern) [67062]    | Vulnerable            | Species or species habitat likely to occur within area |

| Scientific Name  | Threatened Category | Presence Text  |
|--|---------------------|--|
| <a href="#">Diomedea antipodensis</a><br>Antipodean Albatross [64458]  | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea antipodensis gibsoni</a><br>Gibson's Albatross [82270]  | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea epomophora</a><br>Southern Royal Albatross [89221]  | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea exulans</a><br>Wandering Albatross [89223]  | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea sanfordi</a><br>Northern Royal Albatross [64456]  | Endangered          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Falco hypoleucos</a><br>Grey Falcon [929]  | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Fregetta grallaria grallaria</a><br>White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438] | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Gallinago hardwickii</a><br>Latham's Snipe, Japanese Snipe [863]   | Vulnerable          | Species or species habitat known to occur within area              |
| <a href="#">Grantiella picta</a><br>Painted Honeyeater [470]   | Vulnerable          | Species or species habitat known to occur within area              |
| <a href="#">Halobaena caerulea</a><br>Blue Petrel [1059]   | Vulnerable          | Species or species habitat may occur within area                   |

| Scientific Name   | Threatened Category   | Presence Text  |
|---|-----------------------|--|
| <a href="#">Hirundapus caudacutus</a><br>White-throated Needletail [682]  | Vulnerable            | Species or species habitat known to occur within area              |
| <a href="#">Lathamus discolor</a><br>Swift Parrot [744]   | Critically Endangered | Breeding known to occur within area                                |
| <a href="#">Limosa lapponica baueri</a><br>Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]     | Endangered            | Species or species habitat known to occur within area              |
| <a href="#">Limosa limosa</a><br>Black-tailed Godwit [845]  | Endangered            | Roosting known to occur within area                                |
| <a href="#">Macronectes giganteus</a><br>Southern Giant-Petrel, Southern Giant Petrel [1060]                        | Endangered            | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Macronectes halli</a><br>Northern Giant Petrel [1061]   | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Melanodryas cucullata cucullata</a><br>South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093] | Endangered            | Species or species habitat likely to occur within area             |
| <a href="#">Neophema chrysogaster</a><br>Orange-bellied Parrot [747]  | Critically Endangered | Species or species habitat known to occur within area              |
| <a href="#">Neophema chrysostoma</a><br>Blue-winged Parrot [726]  | Vulnerable            | Species or species habitat known to occur within area              |
| <a href="#">Numenius madagascariensis</a><br>Eastern Curlew, Far Eastern Curlew [847]                               | Critically Endangered | Species or species habitat known to occur within area              |
| <a href="#">Pachyptila turtur subantarctica</a><br>Fairy Prion (southern) [64445]                                   | Vulnerable            | Species or species habitat known to occur within area              |

| Scientific Name   | Threatened Category | Presence Text   |
|---|---------------------|---|
| <a href="#">Pardalotus quadragintus</a><br>Forty-spotted Pardalote [418]                              | Endangered          | Foraging, feeding or related behaviour known to occur within area |
| <a href="#">Phoebetria fusca</a><br>Sooty Albatross [1075]  | Vulnerable          | Species or species habitat likely to occur within area            |
| <a href="#">Pluvialis squatarola</a><br>Grey Plover [865]   | Vulnerable          | Roosting known to occur within area                               |
| <a href="#">Pterodroma leucoptera leucoptera</a><br>Gould's Petrel, Australian Gould's Petrel [26033] | Endangered          | Species or species habitat may occur within area                  |
| <a href="#">Pterodroma mollis</a><br>Soft-plumaged Petrel [1036]                                      | Vulnerable          | Species or species habitat may occur within area                  |
| <a href="#">Pycnoptilus floccosus</a><br>Pilotbird [525]  | Vulnerable          | Species or species habitat known to occur within area             |
| <a href="#">Rostratula australis</a><br>Australian Painted Snipe [77037]                              | Endangered          | Species or species habitat known to occur within area             |
| <a href="#">Stagonopleura guttata</a><br>Diamond Firetail [59398]                                     | Vulnerable          | Species or species habitat known to occur within area             |
| <a href="#">Sternula nereis nereis</a><br>Australian Fairy Tern [82950]                               | Vulnerable          | Species or species habitat known to occur within area             |
| <a href="#">Thalassarche bulleri</a><br>Buller's Albatross, Pacific Albatross [64460]                 | Vulnerable          | Species or species habitat may occur within area                  |
| <a href="#">Thalassarche bulleri platei</a><br>Northern Buller's Albatross, Pacific Albatross [82273] | Vulnerable          | Species or species habitat may occur within area                  |

| Scientific Name   | Threatened Category | Presence Text  |
|---|---------------------|--|
| <a href="#">Thalassarche carteri</a><br>Indian Yellow-nosed Albatross [64464]                           | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Thalassarche cauta</a><br>Shy Albatross [89224]   | Endangered          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche chrysostoma</a><br>Grey-headed Albatross [66491]                               | Endangered          | Species or species habitat may occur within area                   |
| <a href="#">Thalassarche eremita</a><br>Chatham Albatross [64457]                                       | Endangered          | Foraging, feeding or related behaviour may occur within area       |
| <a href="#">Thalassarche impavida</a><br>Campbell Albatross, Campbell Black-browed Albatross [64459]    | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]                              | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche salvini</a><br>Salvin's Albatross [64463]                                      | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche steadi</a><br>White-capped Albatross [64462]                                   | Vulnerable          | Foraging, feeding or related behaviour known to occur within area  |
| <a href="#">Thinornis cucullatus cucullatus</a><br>Eastern Hooded Plover, Eastern Hooded Plover [90381] | Vulnerable          | Species or species habitat known to occur within area              |
| <a href="#">Tringa nebularia</a><br>Common Greenshank, Greenshank [832]                                 | Endangered          | Species or species habitat known to occur within area              |

| Scientific Name   | Threatened Category       | Presence Text  |
|---|---------------------------|--|
| <a href="#">Tyto novaehollandiae castanops (Tasmanian population)</a><br>Masked Owl (Tasmanian) [67051]       | Vulnerable                | Breeding known to occur within area                    |
| <a href="#">Xenus cinereus</a><br>Terek Sandpiper [59300]   | Vulnerable                | Roosting known to occur within area                    |
| <b>CRUSTACEAN</b>   |                           |  |
| <a href="#">Astacopsis gouldi</a><br>Giant Freshwater Crayfish, Tasmanian<br>Giant Freshwater Lobster [64415] | Vulnerable                | Species or species habitat known to occur within area  |
| <a href="#">Engaeus granulatus</a><br>Central North Burrowing Crayfish<br>[78959]                             | Endangered                | Species or species habitat known to occur within area  |
| <a href="#">Engaeus martigener</a><br>Furneaux Burrowing Crayfish [67220]                                     | Endangered                | Species or species habitat known to occur within area  |
| <a href="#">Engaeus orramakunna</a><br>Mount Arthur Burrowing Crayfish [66778]                                | Vulnerable                | Species or species habitat known to occur within area  |
| <a href="#">Engaeus spinicaudatus</a><br>Scottsdale Burrowing Crayfish [66780]                                | Endangered                | Species or species habitat known to occur within area  |
| <b>FISH</b>   |                           |  |
| <a href="#">Galaxias sp. nov. 'Morwell'</a><br>Morwell Galaxias [90730]                                       | Critically Endangered     | Species or species habitat known to occur within area  |
| <a href="#">Galaxiella pusilla</a><br>Eastern Dwarf Galaxias, Dwarf Galaxias<br>[56790]                       | Endangered                | Species or species habitat known to occur within area  |
| <a href="#">Hoplostethus atlanticus</a><br>Orange Roughy, Deep-sea Perch, Red<br>Roughy [68455]               | Conservation<br>Dependent | Species or species habitat likely to occur within area |
| <a href="#">Prototroctes maraena</a><br>Australian Grayling [26179]   | Vulnerable                | Species or species habitat known to occur within area  |

| Scientific Name   | Threatened Category       | Presence Text  |
|---|---------------------------|--|
| <a href="#">Rexea solandri (eastern Australian population)</a><br>Eastern Gemfish [76339] | Conservation<br>Dependent | Species or species<br>habitat likely to occur<br>within area |
| <a href="#">Seriolella brama</a><br>Blue Warehou [69374]                                  | Conservation<br>Dependent | Species or species<br>habitat known to<br>occur within area  |
| <a href="#">Thymichthys politus</a><br>Red Handfish [83756]                               | Critically Endangered     | Species or species<br>habitat may occur<br>within area       |

## FROG

|  |            |  |
|--|------------|--|
| <a href="#">Heleioporus australiacus</a><br>Giant Burrowing Frog [1973]  | Vulnerable | Species or species<br>habitat likely to occur<br>within area |
| <a href="#">Litoria aurea</a><br>Green and Golden Bell Frog [1870]   | Vulnerable | Species or species<br>habitat known to<br>occur within area  |
| <a href="#">Litoria raniformis</a><br>Southern Bell Frog,, Growling Grass<br>Frog, Green and Golden Frog, Warty<br>Swamp Frog, Golden Bell Frog [1828] | Vulnerable | Species or species<br>habitat known to<br>occur within area  |
| <a href="#">Uperoleia martini</a><br>Martin's Toadlet [1873]   | Endangered | Species or species<br>habitat known to<br>occur within area  |

## INSECT

|   |            |   |
|---|------------|---|
| <a href="#">Antipodia chaostola leucophaea</a><br>Tasmanian Chaostola Skipper, Heath-<br>sand Skipper [77672] | Endangered | Species or species<br>habitat known to<br>occur within area |
|---|------------|---|

## MAMMAL

|   |            |   |
|---|------------|---|
| <a href="#">Antechinus minimus maritimus</a><br>Swamp Antechinus (mainland) [83086] | Vulnerable | Species or species<br>habitat known to<br>occur within area                 |
| <a href="#">Balaenoptera borealis</a><br>Sei Whale [34]                             | Vulnerable | Foraging, feeding or<br>related behaviour<br>likely to occur within<br>area |

| Scientific Name  | Threatened Category | Presence Text  |
|--|---------------------|--|
| <a href="#">Balaenoptera musculus</a><br>Blue Whale [36]   | Endangered          | Species or species habitat likely to occur within area             |
| <a href="#">Balaenoptera physalus</a><br>Fin Whale [37]  | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Dasyurus maculatus maculatus (SE mainland population)</a><br>Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184] | Endangered          | Species or species habitat known to occur within area              |
| <a href="#">Dasyurus maculatus maculatus (Tasmanian population)</a><br>Spotted-tail Quoll, Spot-tailed Quoll, Tiger Quoll (Tasmanian population) [75183]               | Vulnerable          | Species or species habitat known to occur within area              |
| <a href="#">Dasyurus viverrinus</a><br>Eastern Quoll, Luaner [333]   | Endangered          | Species or species habitat known to occur within area              |
| <a href="#">Eubalaena australis</a><br>Southern Right Whale [40]   | Endangered          | Species or species habitat known to occur within area              |
| <a href="#">Isoodon obesulus obesulus</a><br>Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]                                      | Endangered          | Species or species habitat known to occur within area              |
| <a href="#">Mastacomys fuscus mordicus</a><br>Broad-toothed Rat (mainland), Tooarrana [87617]  | Endangered          | Species or species habitat may occur within area                   |
| <a href="#">Perameles gunnii gunnii</a><br>Eastern Barred Bandicoot (Tasmania) [66651]   | Vulnerable          | Species or species habitat known to occur within area              |
| <a href="#">Petauroides volans</a><br>Greater Glider (southern and central) [254]  | Endangered          | Species or species habitat known to occur within area              |
| <a href="#">Petaurus australis australis</a><br>Yellow-bellied Glider (south-eastern) [87600]  | Vulnerable          | Species or species habitat known to occur within area              |

| Scientific Name   | Threatened Category | Presence Text   |
|---|---------------------|---|
| <a href="#">Potorous tridactylus trisulcatus</a><br>Long-nosed Potoroo (southern mainland) [86367]      | Vulnerable          | Species or species habitat known to occur within area             |
| <a href="#">Pseudomys fumeus</a><br>Smoky Mouse, Konoom [88]  | Endangered          | Species or species habitat may occur within area                  |
| <a href="#">Pseudomys novaehollandiae</a><br>New Holland Mouse, Pookila [96]                            | Vulnerable          | Species or species habitat known to occur within area             |
| <a href="#">Pteropus poliocephalus</a><br>Grey-headed Flying-fox [186]                                  | Vulnerable          | Foraging, feeding or related behaviour known to occur within area |
| <a href="#">Sarcophilus harrisii</a><br>Tasmanian Devil [299]   | Endangered          | Species or species habitat likely to occur within area            |
| <b>PLANT</b>  |                     |   |
| <a href="#">Acacia caerulescens</a><br>Limestone Blue Wattle, Buchan Blue, Buchan Blue Wattle [21883]   | Vulnerable          | Species or species habitat known to occur within area             |
| <a href="#">Amphibromus fluitans</a><br>River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215] | Vulnerable          | Species or species habitat known to occur within area             |
| <a href="#">Astrotricha sp. Wingan Inlet (J.A.Jeanes 2268)</a><br>Wingan Star-hair [85675]              | Endangered          | Species or species habitat may occur within area                  |
| <a href="#">Barbarea australis</a><br>Native Wintercress, Riverbed Wintercress [12540]                  | Endangered          | Species or species habitat likely to occur within area            |
| <a href="#">Caladenia caudata</a><br>Tailed Spider-orchid [17067]                                       | Vulnerable          | Species or species habitat known to occur within area             |
| <a href="#">Caladenia orientalis</a><br>Eastern Spider Orchid [83410]                                   | Endangered          | Species or species habitat known to occur within area             |

| Scientific Name   | Threatened Category   | Presence Text  |
|---|-----------------------|--|
| <a href="#">Caladenia pallida</a><br>Rosy Spider Orchid, Pale Spider-orchid,<br>Summer Spider-orchid [9604] | Critically Endangered | Species or species<br>habitat likely to occur<br>within area |
| <a href="#">Caladenia tessellata</a><br>Thick-lipped Spider-orchid, Daddy Long-<br>legs [2119]              | Vulnerable            | Species or species<br>habitat known to<br>occur within area  |
| <a href="#">Caladenia tonellii</a><br>Robust Fingers [64861]  | Critically Endangered | Species or species<br>habitat known to<br>occur within area  |
| <a href="#">Cassinia rugata</a><br>Wrinkled Cassinia, Wrinkled Dollybush<br>[21885]                         | Vulnerable            | Species or species<br>habitat known to<br>occur within area  |
| <a href="#">Commersonia prostrata</a><br>Dwarf Kerrawang [87152]  | Endangered            | Species or species<br>habitat known to<br>occur within area  |
| <a href="#">Conospermum hookeri</a><br>Variable Smoke-bush [68161]  | Vulnerable            | Species or species<br>habitat likely to occur<br>within area |
| <a href="#">Dianella amoena</a><br>Matted Flax-lily [64886]   | Endangered            | Species or species<br>habitat known to<br>occur within area  |
| <a href="#">Dodonaea procumbens</a><br>Trailing Hop-bush [12149]  | Vulnerable            | Species or species<br>habitat known to<br>occur within area  |
| <a href="#">Epacris graniticola</a><br>Mt Cameron Heath, Granite Heath<br>[82822]                           | Critically Endangered | Species or species<br>habitat known to<br>occur within area  |
| <a href="#">Epacris virgata</a><br>Pretty Heath, Dan Hill Heath [20375]                                     | Endangered            | Species or species<br>habitat known to<br>occur within area  |
| <a href="#">Eucalyptus strzeleckii</a><br>Strzelecki Gum [55400]  | Vulnerable            | Species or species<br>habitat known to<br>occur within area  |

| Scientific Name   | Threatened Category   | Presence Text  |
|---|-----------------------|--|
| <a href="#">Glycine latrobeana</a><br>Clover Glycine, Purple Clover [13910]   | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Lepidium hyssopifolium</a><br>Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]                               | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Leucochrysum albicans subsp. tricolor</a><br>Hoary Sunray, Grassland Paper-daisy [89104]  | Endangered            | Species or species habitat may occur within area       |
| <a href="#">Picris evae</a><br>Hawkweed [10839]   | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Pomaderris pilifera subsp. talpicutica</a><br>Moleskin Dogwood [84295]  | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Pomaderris vacciniifolia</a><br>Round-leaf Pomaderris [4256]  | Critically Endangered | Species or species habitat may occur within area       |
| <a href="#">Prasophyllum apoxychilum</a><br>Tapered Leek-orchid [64947]   | Endangered            | Species or species habitat known to occur within area  |
| <a href="#">Prasophyllum correctum</a><br>Gaping Leek-orchid [64533]  | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Prasophyllum frenchii</a><br>Maroon Leek-orchid, Slaty Leek-orchid, Stout Leek-orchid, French's Leek-orchid, Swamp Leek-orchid [9704] | Endangered            | Species or species habitat known to occur within area  |
| <a href="#">Prasophyllum limnetes</a><br>Marsh Leek-orchid [82678]  | Critically Endangered | Species or species habitat known to occur within area  |
| <a href="#">Prasophyllum pulchellum</a><br>Pretty Leek-orchid [64953]   | Critically Endangered | Species or species habitat known to occur within area  |

| Scientific Name   | Threatened Category   | Presence Text  |
|---|-----------------------|--|
| <a href="#">Prasophyllum robustum</a><br>Robust Leek-orchid [12499]                           | Critically Endangered | Species or species habitat may occur within area       |
| <a href="#">Prasophyllum secutum</a><br>Northern Leek-orchid [64954]                          | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Prasophyllum spicatum</a><br>Dense Leek-orchid [55146]                            | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Prostanthera galbraithiae</a><br>Wellington Mintbush [64959]                      | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Pseudocephalozia paludicola</a><br>Alpine Leafy Liverwort [66441]                 | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Pterostylis chlorogramma</a><br>Green-striped Greenhood [56510]                   | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Pterostylis cucullata</a><br>Leafy Greenhood [15459]                              | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Pterostylis tenuissima</a><br>Swamp Greenhood, Dainty Swamp Orchid [13139]        | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Pterostylis ziegeleri</a><br>Grassland Greenhood, Cape Portland Greenhood [64971] | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Senecio psilocarpus</a><br>Swamp Fireweed, Smooth-fruited Groundsel [64976]       | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Spyridium obcordatum</a><br>Creeping Dusty Miller [17447]                         | Vulnerable            | Species or species habitat known to occur within area  |

| Scientific Name   | Threatened Category   | Presence Text   |
|---|-----------------------|---|
| <a href="#">Tetratheca gunnii</a><br>Shy Pinkbells, Shy Susan [14415]                               | Critically Endangered | Species or species habitat known to occur within area             |
| <a href="#">Thelymitra epipactoides</a><br>Metallic Sun-orchid [11896]                              | Endangered            | Species or species habitat known to occur within area             |
| <a href="#">Thelymitra jonesii</a><br>Sky-blue Sun-orchid [76352]                                   | Endangered            | Species or species habitat known to occur within area             |
| <a href="#">Thelymitra matthewsii</a><br>Spiral Sun-orchid [4168]                                   | Vulnerable            | Species or species habitat may occur within area                  |
| <a href="#">Thesium australe</a><br>Austral Toadflax, Toadflax [15202]                              | Vulnerable            | Species or species habitat may occur within area                  |
| <a href="#">Xanthorrhoea arenaria</a><br>Sand Grasstree [21603]                                     | Vulnerable            | Species or species habitat likely to occur within area            |
| <a href="#">Xanthorrhoea bracteata</a><br>Shiny Grasstree [7950]                                    | Endangered            | Species or species habitat known to occur within area             |
| <a href="#">Xerochrysum palustre</a><br>Swamp Everlasting, Swamp Paper Daisy [76215]                | Vulnerable            | Species or species habitat known to occur within area             |
| <b>REPTILE</b>  |                       |   |
| <a href="#">Aprasia parapulchella</a><br>Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665] | Vulnerable            | Species or species habitat may occur within area                  |
| <a href="#">Caretta caretta</a><br>Loggerhead Turtle [1763]   | Endangered            | Foraging, feeding or related behaviour known to occur within area |
| <a href="#">Chelonia mydas</a><br>Green Turtle [1765]   | Vulnerable            | Species or species habitat may occur within area                  |

| Scientific Name  | Threatened Category | Presence Text   |
|--|---------------------|---|
| <a href="#">Dermochelys coriacea</a><br>Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered          | Foraging, feeding or related behaviour known to occur within area |
| <a href="#">Lissolepis coventryi</a><br>Swamp Skink, Eastern Mourning Skink [84053]      | Endangered          | Species or species habitat known to occur within area             |

## SHARK

|  |                        |  |
|--|------------------------|--|
| <a href="#">Carcharodon carcharias</a><br>White Shark, Great White Shark [64470]   | Vulnerable             | Breeding known to occur within area                    |
| <a href="#">Centrophorus harrissoni</a><br>Harrisson's Dogfish, Endeavour Dogfish, Dumb Gulper Shark, Harrison's Deepsea Dogfish [68444] | Conservation Dependent | Species or species habitat likely to occur within area |
| <a href="#">Centrophorus uyato</a><br>Little Gulper Shark [68446]  | Conservation Dependent | Species or species habitat likely to occur within area |
| <a href="#">Galeorhinus galeus</a><br>School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]                     | Conservation Dependent | Species or species habitat likely to occur within area |
| <a href="#">Rhincodon typus</a><br>Whale Shark [66680]   | Vulnerable             | Species or species habitat may occur within area       |

## Listed Migratory Species

[ [Resource Information](#) ]

| Scientific Name  | Threatened Category | Presence Text  |
|--|---------------------|--|
| <b>Migratory Marine Birds</b>  |                     |  |
| <a href="#">Apus pacificus</a><br>Fork-tailed Swift [678]                                      |                     | Species or species habitat likely to occur within area             |
| <a href="#">Ardenna carneipes</a><br>Flesh-footed Shearwater, Fleshy-footed Shearwater [82404] |                     | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Ardenna grisea</a><br>Sooty Shearwater [82651]                                     | Vulnerable          | Species or species habitat may occur within area                   |

| Scientific Name  | Threatened Category | Presence Text  |
|--|---------------------|--|
| <a href="#">Ardenna tenuirostris</a><br>Short-tailed Shearwater [82652]                      |                     | Breeding known to occur within area                                |
| <a href="#">Diomedea antipodensis</a><br>Antipodean Albatross [64458]                        | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea epomophora</a><br>Southern Royal Albatross [89221]                      | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea exulans</a><br>Wandering Albatross [89223]                              | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea sanfordi</a><br>Northern Royal Albatross [64456]                        | Endangered          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Hydroprogne caspia</a><br>Caspian Tern [808]                                     |                     | Breeding known to occur within area                                |
| <a href="#">Macronectes giganteus</a><br>Southern Giant-Petrel, Southern Giant Petrel [1060] | Endangered          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Macronectes halli</a><br>Northern Giant Petrel [1061]                            | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Phoebastria fusca</a><br>Sooty Albatross [1075]                                  | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Sternula albifrons</a><br>Little Tern [82849]                                    |                     | Breeding known to occur within area                                |
| <a href="#">Thalassarche bulleri</a><br>Buller's Albatross, Pacific Albatross [64460]        | Vulnerable          | Species or species habitat may occur within area                   |

| Scientific Name  | Threatened Category | Presence Text  |
|--|---------------------|--|
| <a href="#">Thalassarche carteri</a><br>Indian Yellow-nosed Albatross [64464]                        | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Thalassarche cauta</a><br>Shy Albatross [89224]  | Endangered          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche chrysostoma</a><br>Grey-headed Albatross [66491]                            | Endangered          | Species or species habitat may occur within area                   |
| <a href="#">Thalassarche eremita</a><br>Chatham Albatross [64457]                                    | Endangered          | Foraging, feeding or related behaviour may occur within area       |
| <a href="#">Thalassarche impavida</a><br>Campbell Albatross, Campbell Black-browed Albatross [64459] | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]                           | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche salvini</a><br>Salvin's Albatross [64463]                                   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche steadi</a><br>White-capped Albatross [64462]                                | Vulnerable          | Foraging, feeding or related behaviour known to occur within area  |
| <b>Migratory Marine Species</b>  |                     |  |
| <a href="#">Balaenoptera bonaerensis</a><br>Antarctic Minke Whale, Dark-shoulder Minke Whale [67812] |                     | Species or species habitat likely to occur within area             |
| <a href="#">Balaenoptera borealis</a><br>Sei Whale [34]  | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |

| Scientific Name   | Threatened Category | Presence Text  |
|---|---------------------|--|
| <a href="#">Balaenoptera edeni</a><br>Bryde's Whale [35]  |                     | Species or species habitat may occur within area                   |
| <a href="#">Balaenoptera musculus</a><br>Blue Whale [36]  | Endangered          | Species or species habitat likely to occur within area             |
| <a href="#">Balaenoptera physalus</a><br>Fin Whale [37]   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Caperea marginata</a><br>Pygmy Right Whale [39]                                     |                     | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Carcharhinus longimanus</a><br>Oceanic Whitetip Shark [84108]                       |                     | Species or species habitat may occur within area                   |
| <a href="#">Carcharodon carcharias</a><br>White Shark, Great White Shark [64470]                | Vulnerable          | Breeding known to occur within area                                |
| <a href="#">Caretta caretta</a><br>Loggerhead Turtle [1763]                                     | Endangered          | Foraging, feeding or related behaviour known to occur within area  |
| <a href="#">Chelonia mydas</a><br>Green Turtle [1765]   | Vulnerable          | Species or species habitat may occur within area                   |
| <a href="#">Dermochelys coriacea</a><br>Leatherback Turtle, Leathery Turtle, Luth [1768]        | Endangered          | Foraging, feeding or related behaviour known to occur within area  |
| <a href="#">Eubalaena australis as Balaena glacialis australis</a><br>Southern Right Whale [40] | Endangered          | Species or species habitat known to occur within area              |
| <a href="#">Isurus oxyrinchus</a><br>Shortfin Mako, Mako Shark [79073]                          |                     | Species or species habitat likely to occur within area             |

| Scientific Name  | Threatened Category | Presence Text  |
|--|---------------------|--|
| <a href="#">Lagenorhynchus obscurus</a><br>Dusky Dolphin [43]            |                     | Species or species habitat likely to occur within area |
| <a href="#">Lamna nasus</a><br>Porbeagle, Mackerel Shark [83288]         |                     | Species or species habitat likely to occur within area |
| <a href="#">Megaptera novaeangliae</a><br>Humpback Whale [38]            |                     | Species or species habitat known to occur within area  |
| <a href="#">Orcinus orca</a><br>Killer Whale, Orca [46]                  |                     | Species or species habitat likely to occur within area |
| <a href="#">Physeter macrocephalus</a><br>Sperm Whale [59]               |                     | Species or species habitat may occur within area       |
| <a href="#">Rhincodon typus</a><br>Whale Shark [66680]                   | Vulnerable          | Species or species habitat may occur within area       |
| <b>Migratory Terrestrial Species</b>                                     |                     |  |
| <a href="#">Hirundapus caudacutus</a><br>White-throated Needletail [682] | Vulnerable          | Species or species habitat known to occur within area  |
| <a href="#">Monarcha melanopsis</a><br>Black-faced Monarch [609]         |                     | Species or species habitat known to occur within area  |
| <a href="#">Motacilla flava</a><br>Yellow Wagtail [644]                  |                     | Species or species habitat may occur within area       |
| <a href="#">Myiagra cyanoleuca</a><br>Satin Flycatcher [612]             |                     | Breeding known to occur within area                    |
| <a href="#">Rhipidura rufifrons</a><br>Rufous Fantail [592]              |                     | Species or species habitat known to occur within area  |
| <b>Migratory Wetlands Species</b>  |                     |  |

| Scientific Name  | Threatened Category   | Presence Text   |
|--|-----------------------|---|
| <a href="#">Actitis hypoleucos</a><br>Common Sandpiper [59309]                           |                       | Species or species habitat known to occur within area |
| <a href="#">Arenaria interpres</a><br>Ruddy Turnstone [872]                              | Vulnerable            | Roosting known to occur within area                   |
| <a href="#">Calidris acuminata</a><br>Sharp-tailed Sandpiper [874]                       | Vulnerable            | Roosting known to occur within area                   |
| <a href="#">Calidris alba</a><br>Sanderling [875]  |                       | Roosting known to occur within area                   |
| <a href="#">Calidris canutus</a><br>Red Knot, Knot [855]                                 | Vulnerable            | Species or species habitat known to occur within area |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]                            | Critically Endangered | Species or species habitat known to occur within area |
| <a href="#">Calidris melanotos</a><br>Pectoral Sandpiper [858]                           |                       | Species or species habitat known to occur within area |
| <a href="#">Calidris pugnax as Philomachus pugnax</a><br>Ruff [91256]                    |                       | Roosting known to occur within area                   |
| <a href="#">Calidris ruficollis</a><br>Red-necked Stint [860]                            |                       | Roosting known to occur within area                   |
| <a href="#">Calidris tenuirostris</a><br>Great Knot [862]                                | Vulnerable            | Roosting known to occur within area                   |
| <a href="#">Charadrius bicinctus</a><br>Double-banded Plover [895]                       |                       | Roosting known to occur within area                   |
| <a href="#">Charadrius leschenaultii</a><br>Greater Sand Plover, Large Sand Plover [877] | Vulnerable            | Species or species habitat known to occur within area |
| <a href="#">Charadrius mongolus</a><br>Lesser Sand Plover, Mongolian Plover [879]        | Endangered            | Roosting known to occur within area                   |

| Scientific Name   | Threatened Category   | Presence Text   |
|---|-----------------------|---|
| <a href="#">Charadrius veredus</a><br>Oriental Plover, Oriental Dotterel [882]        |                       | Species or species habitat known to occur within area |
| <a href="#">Gallinago hardwickii</a><br>Latham's Snipe, Japanese Snipe [863]          | Vulnerable            | Species or species habitat known to occur within area |
| <a href="#">Gallinago megala</a><br>Swinhoe's Snipe [864]                             |                       | Species or species habitat known to occur within area |
| <a href="#">Gallinago stenura</a><br>Pin-tailed Snipe [841]                           |                       | Roosting likely to occur within area                  |
| <a href="#">Limosa lapponica</a><br>Bar-tailed Godwit [844]                           |                       | Species or species habitat known to occur within area |
| <a href="#">Limosa limosa</a><br>Black-tailed Godwit [845]                            | Endangered            | Roosting known to occur within area                   |
| <a href="#">Numenius madagascariensis</a><br>Eastern Curlew, Far Eastern Curlew [847] | Critically Endangered | Species or species habitat known to occur within area |
| <a href="#">Numenius minutus</a><br>Little Curlew, Little Whimbrel [848]              |                       | Roosting known to occur within area                   |
| <a href="#">Numenius phaeopus</a><br>Whimbrel [849]                                   |                       | Roosting known to occur within area                   |
| <a href="#">Pandion haliaetus</a><br>Osprey [952]                                     |                       | Species or species habitat known to occur within area |
| <a href="#">Pluvialis fulva</a><br>Pacific Golden Plover [25545]                      |                       | Roosting known to occur within area                   |
| <a href="#">Pluvialis squatarola</a><br>Grey Plover [865]                             | Vulnerable            | Roosting known to occur within area                   |
| <a href="#">Thalasseus bergii</a><br>Greater Crested Tern [83000]                     |                       | Breeding known to occur within area                   |

| Scientific Name  | Threatened Category | Presence Text   |
|--|---------------------|---|
| <a href="#">Tringa brevipes</a><br>Grey-tailed Tattler [851]                   |                     | Roosting known to occur within area                   |
| <a href="#">Tringa glareola</a><br>Wood Sandpiper [829]                        |                     | Roosting known to occur within area                   |
| <a href="#">Tringa nebularia</a><br>Common Greenshank, Greenshank [832]        | Endangered          | Species or species habitat known to occur within area |
| <a href="#">Tringa stagnatilis</a><br>Marsh Sandpiper, Little Greenshank [833] |                     | Roosting known to occur within area                   |
| <a href="#">Xenus cinereus</a><br>Terek Sandpiper [59300]                      | Vulnerable          | Roosting known to occur within area                   |

## Other Matters Protected by the EPBC Act

### Commonwealth Lands [\[ Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

| Commonwealth Land Name                     | State |
|--|-------|
| <b>Defence</b>                             |       |
| Defence - AFFSE - SCOTTSDALE [60028]       | TAS   |
| Defence - AFFSE - SCOTTSDALE [60029]       | TAS   |
| Defence - AFFSE - SCOTTSDALE [60032]       | TAS   |
| Defence - AFFSE - SCOTTSDALE [60030]       | TAS   |
| Defence - AFFSE - SCOTTSDALE [60031]       | TAS   |
| Defence - DEVONPORT TRAINING DEPOT [60009] | TAS   |
| Defence - DEVONPORT TRAINING DEPOT [60010] | TAS   |
| Defence - DEVONPORT TRAINING DEPOT [60011] | TAS   |
| Defence - DEVONPORT TRAINING DEPOT [60008] | TAS   |
| Defence - DUTSON BOMBING RANGE [20046]     | VIC   |
| Defence - DUTSON BOMBING RANGE [20047]     | VIC   |

| Commonwealth Land Name                 | State |
|--|-------|
| Defence - DUTSON BOMBING RANGE [20044] | VIC   |
| Defence - DUTSON BOMBING RANGE [20042] | VIC   |
| Defence - DUTSON BOMBING RANGE [20040] | VIC   |
| Defence - DUTSON BOMBING RANGE [20049] | VIC   |
| Defence - DUTSON BOMBING RANGE [20029] | VIC   |
| Defence - DUTSON BOMBING RANGE [20030] | VIC   |
| Defence - DUTSON BOMBING RANGE [20038] | VIC   |
| Defence - DUTSON BOMBING RANGE [20058] | VIC   |
| Defence - DUTSON BOMBING RANGE [20034] | VIC   |
| Defence - DUTSON BOMBING RANGE [20033] | VIC   |
| Defence - DUTSON BOMBING RANGE [20032] | VIC   |
| Defence - DUTSON BOMBING RANGE [20031] | VIC   |
| Defence - DUTSON BOMBING RANGE [20037] | VIC   |
| Defence - DUTSON BOMBING RANGE [20036] | VIC   |
| Defence - DUTSON BOMBING RANGE [20035] | VIC   |
| Defence - DUTSON BOMBING RANGE [20059] | VIC   |
| Defence - DUTSON BOMBING RANGE [20041] | VIC   |
| Defence - DUTSON BOMBING RANGE [20060] | VIC   |
| Defence - DUTSON BOMBING RANGE [20061] | VIC   |
| Defence - DUTSON BOMBING RANGE [20053] | VIC   |
| Defence - DUTSON BOMBING RANGE [20052] | VIC   |
| Defence - DUTSON BOMBING RANGE [20051] | VIC   |
| Defence - DUTSON BOMBING RANGE [20050] | VIC   |
| Defence - DUTSON BOMBING RANGE [20056] | VIC   |
| Defence - DUTSON BOMBING RANGE [20057] | VIC   |
| Defence - DUTSON BOMBING RANGE [20054] | VIC   |
| Defence - DUTSON BOMBING RANGE [20043] | VIC   |

| Commonwealth Land Name                           | State |
|--|-------|
| Defence - DUTSON BOMBING RANGE [20048]           | VIC   |
| Defence - DUTSON BOMBING RANGE [20055]           | VIC   |
| Defence - DUTSON BOMBING RANGE [20039]           | VIC   |
| Defence - DUTSON BOMBING RANGE [20062]           | VIC   |
| Defence - DUTSON BOMBING RANGE [20045]           | VIC   |
| Defence - EAST SALE - SURVEILLANCE RADAR [21445] | VIC   |
| Defence - RAAF EAST SALE [20011]                 | VIC   |
| Defence - RAAF EAST SALE [20010]                 | VIC   |
| Defence - RAAF EAST SALE [20003]                 | VIC   |
| Defence - RAAF EAST SALE [20009]                 | VIC   |
| Defence - RAAF EAST SALE [20002]                 | VIC   |
| Defence - RAAF EAST SALE [20005]                 | VIC   |
| Defence - RAAF EAST SALE [20004]                 | VIC   |
| Defence - RAAF EAST SALE [20006]                 | VIC   |
| Defence - RAAF EAST SALE [20001]                 | VIC   |
| Defence - RAAF EAST SALE [20008]                 | VIC   |
| Defence - RAAF EAST SALE [20007]                 | VIC   |
| Defence - STONYHEAD TRAINING AREA [60025]        | TAS   |
| Defence - STONYHEAD TRAINING AREA [60026]        | TAS   |
| <b>Unknown</b>                                   |       |
| Commonwealth Land - [60179]                      | TAS   |
| Commonwealth Land - [21491]                      | VIC   |
| Commonwealth Land - [21490]                      | VIC   |
| Commonwealth Land - [60205]                      | TAS   |
| Commonwealth Land - [60206]                      | TAS   |
| Commonwealth Land - [60091]                      | TAS   |
| Commonwealth Land - [60099]                      | TAS   |

| Commonwealth Land Name      | State |
|-----------------------------|-------|
| Commonwealth Land - [60098] | TAS   |
| Commonwealth Land - [60066] | TAS   |
| Commonwealth Land - [60180] | TAS   |
| Commonwealth Land - [60080] | TAS   |
| Commonwealth Land - [60081] | TAS   |
| Commonwealth Land - [60082] | TAS   |
| Commonwealth Land - [60067] | TAS   |
| Commonwealth Land - [60177] | TAS   |
| Commonwealth Land - [60181] | TAS   |
| Commonwealth Land - [60079] | TAS   |
| Commonwealth Land - [60209] | TAS   |
| Commonwealth Land - [60065] | TAS   |
| Commonwealth Land - [60178] | TAS   |
| Commonwealth Land - [60074] | TAS   |
| Commonwealth Land - [60173] | TAS   |
| Commonwealth Land - [60104] | TAS   |
| Commonwealth Land - [60078] | TAS   |
| Commonwealth Land - [60076] | TAS   |
| Commonwealth Land - [60075] | TAS   |
| Commonwealth Land - [60103] | TAS   |
| Commonwealth Land - [60102] | TAS   |
| Commonwealth Land - [21489] | VIC   |
| Commonwealth Land - [60204] | TAS   |
| Commonwealth Land - [60216] | TAS   |
| Commonwealth Land - [60034] | TAS   |
| Commonwealth Land - [60192] | TAS   |
| Commonwealth Land - [60195] | TAS   |

| Commonwealth Land Name      | State |
|-----------------------------|-------|
| Commonwealth Land - [60093] | TAS   |
| Commonwealth Land - [60092] | TAS   |
| Commonwealth Land - [60097] | TAS   |
| Commonwealth Land - [60211] | TAS   |
| Commonwealth Land - [60105] | TAS   |
| Commonwealth Land - [60064] | TAS   |
| Commonwealth Land - [60189] | TAS   |
| Commonwealth Land - [21488] | VIC   |
| Commonwealth Land - [60227] | TAS   |
| Commonwealth Land - [60077] | TAS   |

### Commonwealth Heritage Places [\[ Resource Information \]](#)

| Name   | State | Status       |
|--|-------|--------------|
| Historic                                       |       |              |
| <a href="#">Goose Island Lighthouse</a>        | TAS   | Listed place |
| <a href="#">Mersey Bluff Lighthouse</a>        | TAS   | Listed place |
| <a href="#">Traralgon Post Office</a>          | VIC   | Listed place |
| <a href="#">Wilson's Promontory Lighthouse</a> | VIC   | Listed place |

### Listed Marine Species [\[ Resource Information \]](#)

| Scientific Name   | Threatened Category | Presence Text  |
|---|---------------------|--|
| Bird  |                     |  |
| <a href="#">Actitis hypoleucos</a>                        |                     |  |
| Common Sandpiper [59309]                                  |                     | Species or species habitat known to occur within area                      |
| <a href="#">Apus pacificus</a>                            |                     |  |
| Fork-tailed Swift [678]                                   |                     | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Ardenna carneipes as Puffinus carneipes</a>   |                     |  |
| Flesh-footed Shearwater, Fleshy-footed Shearwater [82404] |                     | Foraging, feeding or related behaviour likely to occur within area         |

| Scientific Name  | Threatened Category   | Presence Text   |
|--|-----------------------|---|
| <a href="#">Ardenna grisea as Puffinus griseus</a><br>Sooty Shearwater [82651]                   | Vulnerable            | Species or species habitat may occur within area                          |
| <a href="#">Ardenna tenuirostris as Puffinus tenuirostris</a><br>Short-tailed Shearwater [82652] |                       | Breeding known to occur within area                                       |
| <a href="#">Arenaria interpres</a><br>Ruddy Turnstone [872]                                      | Vulnerable            | Roosting known to occur within area                                       |
| <a href="#">Bubulcus ibis as Ardea ibis</a><br>Cattle Egret [66521]                              |                       | Breeding likely to occur within area overfly marine area                  |
| <a href="#">Calidris acuminata</a><br>Sharp-tailed Sandpiper [874]                               | Vulnerable            | Roosting known to occur within area                                       |
| <a href="#">Calidris alba</a><br>Sanderling [875]  |                       | Roosting known to occur within area                                       |
| <a href="#">Calidris canutus</a><br>Red Knot, Knot [855]   | Vulnerable            | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]                                    | Critically Endangered | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Calidris melanotos</a><br>Pectoral Sandpiper [858]                                   |                       | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Calidris pugnax as Philomachus pugnax</a><br>Ruff [91256]                            |                       | Roosting known to occur within area overfly marine area                   |
| <a href="#">Calidris ruficollis</a><br>Red-necked Stint [860]                                    |                       | Roosting known to occur within area overfly marine area                   |

| Scientific Name   | Threatened Category | Presence Text  |
|---|---------------------|--|
| <a href="#">Calidris tenuirostris</a><br>Great Knot [862]                                       | Vulnerable          | Roosting known to occur within area<br>overfly marine area                   |
| <a href="#">Charadrius bicinctus</a><br>Double-banded Plover [895]                              |                     | Roosting known to occur within area<br>overfly marine area                   |
| <a href="#">Charadrius leschenaultii</a><br>Greater Sand Plover, Large Sand Plover [877]        | Vulnerable          | Species or species habitat known to occur within area                        |
| <a href="#">Charadrius mongolus</a><br>Lesser Sand Plover, Mongolian Plover [879]               | Endangered          | Roosting known to occur within area  |
| <a href="#">Charadrius ruficapillus</a><br>Red-capped Plover [881]                              |                     | Roosting known to occur within area<br>overfly marine area                   |
| <a href="#">Charadrius veredus</a><br>Oriental Plover, Oriental Dotterel [882]                  |                     | Species or species habitat known to occur within area<br>overfly marine area |
| <a href="#">Chroicocephalus novaehollandiae as Larus novaehollandiae</a><br>Silver Gull [82326] |                     | Breeding known to occur within area  |
| <a href="#">Diomedea antipodensis</a><br>Antipodean Albatross [64458]                           | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area           |
| <a href="#">Diomedea antipodensis gibsoni as Diomedea gibsoni</a><br>Gibson's Albatross [82270] | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area           |
| <a href="#">Diomedea epomophora</a><br>Southern Royal Albatross [89221]                         | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area           |
| <a href="#">Diomedea exulans</a><br>Wandering Albatross [89223]                                 | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area           |

| Scientific Name   | Threatened Category | Presence Text   |
|---|---------------------|---|
| <a href="#">Diomedea sanfordi</a><br>Northern Royal Albatross [64456]         | Endangered          | Foraging, feeding or related behaviour likely to occur within area        |
| <a href="#">Eudyptula minor</a><br>Little Penguin [1085]                      |                     | Breeding known to occur within area                                       |
| <a href="#">Gallinago hardwickii</a><br>Latham's Snipe, Japanese Snipe [863]  | Vulnerable          | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Gallinago megala</a><br>Swinhoe's Snipe [864]                     |                     | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Gallinago stenura</a><br>Pin-tailed Snipe [841]                   |                     | Roosting likely to occur within area overfly marine area                  |
| <a href="#">Haliaeetus leucogaster</a><br>White-bellied Sea-Eagle [943]       |                     | Breeding known to occur within area                                       |
| <a href="#">Halobaena caerulea</a><br>Blue Petrel [1059]                      | Vulnerable          | Species or species habitat may occur within area                          |
| <a href="#">Himantopus himantopus</a><br>Pied Stilt, Black-winged Stilt [870] |                     | Roosting known to occur within area overfly marine area                   |
| <a href="#">Hirundapus caudacutus</a><br>White-throated Needletail [682]      | Vulnerable          | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Hydroprogne caspia as Sterna caspia</a><br>Caspian Tern [808]     |                     | Breeding known to occur within area                                       |
| <a href="#">Larus dominicanus</a><br>Kelp Gull [809]                          |                     | Breeding known to occur within area                                       |

| Scientific Name  | Threatened Category   | Presence Text  |
|--|-----------------------|--|
| <a href="#">Larus pacificus</a><br>Pacific Gull [811]  |                       | Breeding known to occur within area  |
| <a href="#">Lathamus discolor</a><br>Swift Parrot [744]                                      | Critically Endangered | Breeding known to occur within area<br>overfly marine area                   |
| <a href="#">Limosa lapponica</a><br>Bar-tailed Godwit [844]                                  |                       | Species or species habitat known to occur within area                        |
| <a href="#">Limosa limosa</a><br>Black-tailed Godwit [845]                                   | Endangered            | Roosting known to occur within area<br>overfly marine area                   |
| <a href="#">Macronectes giganteus</a><br>Southern Giant-Petrel, Southern Giant Petrel [1060] | Endangered            | Foraging, feeding or related behaviour likely to occur within area           |
| <a href="#">Macronectes halli</a><br>Northern Giant Petrel [1061]                            | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area           |
| <a href="#">Merops ornatus</a><br>Rainbow Bee-eater [670]                                    |                       | Species or species habitat may occur within area<br>overfly marine area      |
| <a href="#">Monarcha melanopsis</a><br>Black-faced Monarch [609]                             |                       | Species or species habitat known to occur within area<br>overfly marine area |
| <a href="#">Motacilla flava</a><br>Yellow Wagtail [644]                                      |                       | Species or species habitat may occur within area<br>overfly marine area      |
| <a href="#">Myiagra cyanoleuca</a><br>Satin Flycatcher [612]                                 |                       | Breeding known to occur within area<br>overfly marine area                   |

| Scientific Name   | Threatened Category   | Presence Text   |
|---|-----------------------|---|
| <a href="#">Neophema chrysogaster</a><br>Orange-bellied Parrot [747]                  | Critically Endangered | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Neophema chrysostoma</a><br>Blue-winged Parrot [726]                      | Vulnerable            | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Numenius madagascariensis</a><br>Eastern Curlew, Far Eastern Curlew [847] | Critically Endangered | Species or species habitat known to occur within area                     |
| <a href="#">Numenius minutus</a><br>Little Curlew, Little Whimbrel [848]              |                       | Roosting known to occur within area overfly marine area                   |
| <a href="#">Numenius phaeopus</a><br>Whimbrel [849]                                   |                       | Roosting known to occur within area                                       |
| <a href="#">Onychoprion fuscatus as Sterna fuscata</a><br>Sooty Tern [90682]          |                       | Breeding known to occur within area                                       |
| <a href="#">Pachyptila turtur</a><br>Fairy Prion [1066]                               |                       | Species or species habitat known to occur within area                     |
| <a href="#">Pandion haliaetus</a><br>Osprey [952]                                     |                       | Species or species habitat known to occur within area                     |
| <a href="#">Pelagodroma marina</a><br>White-faced Storm-Petrel [1016]                 |                       | Breeding known to occur within area                                       |
| <a href="#">Pelecanoides urinatrix</a><br>Common Diving-Petrel [1018]                 |                       | Breeding known to occur within area                                       |
| <a href="#">Phalacrocorax fuscescens</a><br>Black-faced Cormorant [59660]             |                       | Breeding known to occur within area                                       |
| <a href="#">Phoebastria fusca</a><br>Sooty Albatross [1075]                           | Vulnerable            | Species or species habitat likely to occur within area                    |

| Scientific Name  | Threatened Category | Presence Text  |
|--|---------------------|--|
| <a href="#">Pluvialis fulva</a><br>Pacific Golden Plover [25545]   |                     | Roosting known to occur within area  |
| <a href="#">Pluvialis squatarola</a><br>Grey Plover [865]  | Vulnerable          | Roosting known to occur within area<br>overfly marine area                   |
| <a href="#">Pterodroma cervicalis</a><br>White-necked Petrel [59642]   |                     | Species or species habitat may occur within area                             |
| <a href="#">Pterodroma mollis</a><br>Soft-plumaged Petrel [1036]   | Vulnerable          | Species or species habitat may occur within area                             |
| <a href="#">Recurvirostra novaehollandiae</a><br>Red-necked Avocet [871]   |                     | Roosting known to occur within area<br>overfly marine area                   |
| <a href="#">Rhipidura rufifrons</a><br>Rufous Fantail [592]  |                     | Species or species habitat known to occur within area<br>overfly marine area |
| <a href="#">Rostratula australis as Rostratula benghalensis (sensu lato)</a><br>Australian Painted Snipe [77037] | Endangered          | Species or species habitat known to occur within area<br>overfly marine area |
| <a href="#">Stercorarius antarcticus as Catharacta skua</a><br>Brown Skua [85039]                                |                     | Species or species habitat may occur within area                             |
| <a href="#">Sterna striata</a><br>White-fronted Tern [799]   |                     | Breeding known to occur within area  |
| <a href="#">Sternula albifrons as Sterna albifrons</a><br>Little Tern [82849]                                    |                     | Breeding known to occur within area  |
| <a href="#">Sternula nereis as Sterna nereis</a><br>Fairy Tern [82949]   |                     | Breeding known to occur within area  |
| <a href="#">Thalassarche bulleri</a><br>Buller's Albatross, Pacific Albatross [64460]                            | Vulnerable          | Species or species habitat may occur within area                             |

| Scientific Name  | Threatened Category | Presence Text  |
|--|---------------------|--|
| <a href="#">Thalassarche bulleri platei</a> as <a href="#">Thalassarche sp. nov.</a><br>Northern Buller's Albatross, Pacific Albatross [82273] | Vulnerable          | Species or species habitat may occur within area                   |
| <a href="#">Thalassarche carteri</a><br>Indian Yellow-nosed Albatross [64464]  | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Thalassarche cauta</a><br>Shy Albatross [89224]  | Endangered          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche chrysostoma</a><br>Grey-headed Albatross [66491]  | Endangered          | Species or species habitat may occur within area                   |
| <a href="#">Thalassarche eremita</a><br>Chatham Albatross [64457]  | Endangered          | Foraging, feeding or related behaviour may occur within area       |
| <a href="#">Thalassarche impavida</a><br>Campbell Albatross, Campbell Black-browed Albatross [64459]   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche salvini</a><br>Salvin's Albatross [64463]   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche steadi</a><br>White-capped Albatross [64462]  | Vulnerable          | Foraging, feeding or related behaviour known to occur within area  |
| <a href="#">Thalasseus bergii</a> as <a href="#">Sterna bergii</a><br>Greater Crested Tern [83000]   |                     | Breeding known to occur within area                                |

| Scientific Name  | Threatened Category | Presence Text   |
|--|---------------------|---|
| <a href="#">Thinornis cucullatus as Thinornis rubricollis</a><br>Hooded Plover, Hooded Dotterel [87735]                                      |                     | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Thinornis cucullatus cucullatus as Thinornis rubricollis rubricollis</a><br>Eastern Hooded Plover, Eastern Hooded Plover [90381] | Vulnerable          | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Tringa brevipes as Heteroscelus brevipes</a><br>Grey-tailed Tattler [851]  |                     | Roosting known to occur within area                                       |
| <a href="#">Tringa glareola</a><br>Wood Sandpiper [829]  |                     | Roosting known to occur within area overfly marine area                   |
| <a href="#">Tringa nebularia</a><br>Common Greenshank, Greenshank [832]  | Endangered          | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Tringa stagnatilis</a><br>Marsh Sandpiper, Little Greenshank [833]   |                     | Roosting known to occur within area overfly marine area                   |
| <a href="#">Xenus cinereus</a><br>Terek Sandpiper [59300]  | Vulnerable          | Roosting known to occur within area overfly marine area                   |
| <b>Fish</b>  |                     |   |
| <a href="#">Heraldia nocturna</a><br>Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]                |                     | Species or species habitat may occur within area                          |
| <a href="#">Hippocampus abdominalis</a><br>Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]              |                     | Species or species habitat may occur within area                          |
| <a href="#">Hippocampus breviceps</a><br>Short-head Seahorse, Short-snouted Seahorse [66235]   |                     | Species or species habitat may occur within area                          |
| <a href="#">Hippocampus minotaur</a><br>Bullneck Seahorse [66705]  |                     | Species or species habitat may occur within area                          |

| Scientific Name   | Threatened Category | Presence Text                                    |
|---|---------------------|--|
| <a href="#">Histiogamphelus briggsii</a><br>Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]    |                     | Species or species habitat may occur within area |
| <a href="#">Histiogamphelus cristatus</a><br>Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243] |                     | Species or species habitat may occur within area |
| <a href="#">Hypselognathus rostratus</a><br>Knifesnout Pipefish, Knife-snouted Pipefish [66245]                     |                     | Species or species habitat may occur within area |
| <a href="#">Kaupus costatus</a><br>Deepbody Pipefish, Deep-bodied Pipefish [66246]                                  |                     | Species or species habitat may occur within area |
| <a href="#">Kimblaeus bassensis</a><br>Trawl Pipefish, Bass Strait Pipefish [66247]                                 |                     | Species or species habitat may occur within area |
| <a href="#">Leptoichthys fistularius</a><br>Brushtail Pipefish [66248]  |                     | Species or species habitat may occur within area |
| <a href="#">Lissocampus caudalis</a><br>Australian Smooth Pipefish, Smooth Pipefish [66249]                         |                     | Species or species habitat may occur within area |
| <a href="#">Lissocampus runa</a><br>Javelin Pipefish [66251]  |                     | Species or species habitat may occur within area |
| <a href="#">Maroubra perserrata</a><br>Sawtooth Pipefish [66252]  |                     | Species or species habitat may occur within area |
| <a href="#">Mitotichthys semistriatus</a><br>Halfbanded Pipefish [66261]  |                     | Species or species habitat may occur within area |
| <a href="#">Mitotichthys tuckeri</a><br>Tucker's Pipefish [66262]   |                     | Species or species habitat may occur within area |

| Scientific Name   | Threatened Category | Presence Text                                    |
|---|---------------------|--|
| <a href="#">Notiocampus ruber</a><br>Red Pipefish [66265]   |                     | Species or species habitat may occur within area |
| <a href="#">Phycodurus eques</a><br>Leafy Seadragon [66267]   |                     | Species or species habitat may occur within area |
| <a href="#">Phyllopteryx taeniolatus</a><br>Common Seadragon, Weedy Seadragon [66268]                                 |                     | Species or species habitat may occur within area |
| <a href="#">Pugnaso curtirostris</a><br>Pugnose Pipefish, Pug-nosed Pipefish [66269]                                  |                     | Species or species habitat may occur within area |
| <a href="#">Solegnathus robustus</a><br>Robust Pipehorse, Robust Spiny Pipehorse [66274]                              |                     | Species or species habitat may occur within area |
| <a href="#">Solegnathus spinosissimus</a><br>Spiny Pipehorse, Australian Spiny Pipehorse [66275]                      |                     | Species or species habitat may occur within area |
| <a href="#">Stigmatopora argus</a><br>Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]                       |                     | Species or species habitat may occur within area |
| <a href="#">Stigmatopora nigra</a><br>Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]                 |                     | Species or species habitat may occur within area |
| <a href="#">Stipecampus cristatus</a><br>Ringback Pipefish, Ring-backed Pipefish [66278]                              |                     | Species or species habitat may occur within area |
| <a href="#">Syngnathoides biaculeatus</a><br>Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279] |                     | Species or species habitat may occur within area |
| <a href="#">Urocampus carinirostris</a><br>Hairy Pipefish [66282]   |                     | Species or species habitat may occur within area |

| Scientific Name  | Threatened Category | Presence Text                                    |
|--|---------------------|--|
| <a href="#">Vanacampus margaritifer</a><br>Mother-of-pearl Pipefish [66283]  |                     | Species or species habitat may occur within area |
| <a href="#">Vanacampus phillipi</a><br>Port Phillip Pipefish [66284]   |                     | Species or species habitat may occur within area |
| <a href="#">Vanacampus poecilolaemus</a><br>Longsnout Pipefish, Australian Longsnout Pipefish, Long-snouted Pipefish [66285] |                     | Species or species habitat may occur within area |

### Mammal

|   |  |  |
|---|--|--|
| <a href="#">Arctocephalus forsteri</a><br>Long-nosed Fur-seal, New Zealand Fur-seal [20]      |  | Species or species habitat may occur within area |
| <a href="#">Arctocephalus pusillus</a><br>Australian Fur-seal, Australo-African Fur-seal [21] |  | Breeding known to occur within area              |

### Reptile

|  |            |   |
|--|------------|---|
| <a href="#">Caretta caretta</a><br>Loggerhead Turtle [1763]                              | Endangered | Foraging, feeding or related behaviour known to occur within area |
| <a href="#">Chelonia mydas</a><br>Green Turtle [1765]                                    | Vulnerable | Species or species habitat may occur within area                  |
| <a href="#">Dermochelys coriacea</a><br>Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Foraging, feeding or related behaviour known to occur within area |

### Whales and Other Cetaceans

[ [Resource Information](#) ]

| Current Scientific Name  | Status | Type of Presence                                       |
|--|--------|--|
| <b>Mammal</b>  |        |  |
| <a href="#">Balaenoptera acutorostrata</a><br>Minke Whale [33]                                       |        | Species or species habitat may occur within area       |
| <a href="#">Balaenoptera bonaerensis</a><br>Antarctic Minke Whale, Dark-shoulder Minke Whale [67812] |        | Species or species habitat likely to occur within area |

| Current Scientific Name  | Status     | Type of Presence   |
|--|------------|--|
| <a href="#">Balaenoptera borealis</a><br>Sei Whale [34]                                  | Vulnerable | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Balaenoptera edeni</a><br>Bryde's Whale [35]                                 |            | Species or species habitat may occur within area                   |
| <a href="#">Balaenoptera musculus</a><br>Blue Whale [36]                                 | Endangered | Species or species habitat likely to occur within area             |
| <a href="#">Balaenoptera physalus</a><br>Fin Whale [37]                                  | Vulnerable | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Berardius arnuxii</a><br>Arnoux's Beaked Whale [70]                          |            | Species or species habitat may occur within area                   |
| <a href="#">Caperea marginata</a><br>Pygmy Right Whale [39]                              |            | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Delphinus delphis</a><br>Common Dolphin, Short-beaked<br>Common Dolphin [60] |            | Species or species habitat may occur within area                   |
| <a href="#">Eubalaena australis</a><br>Southern Right Whale [40]                         | Endangered | Species or species habitat known to occur within area              |
| <a href="#">Globicephala macrorhynchus</a><br>Short-finned Pilot Whale [62]              |            | Species or species habitat may occur within area                   |
| <a href="#">Globicephala melas</a><br>Long-finned Pilot Whale [59282]                    |            | Species or species habitat may occur within area                   |
| <a href="#">Grampus griseus</a><br>Risso's Dolphin, Grampus [64]                         |            | Species or species habitat may occur within area                   |

| Current Scientific Name   | Status | Type of Presence                                       |
|---|--------|--|
| <a href="#">Kogia breviceps</a><br>Pygmy Sperm Whale [57]   |        | Species or species habitat may occur within area       |
| <a href="#">Kogia sima</a><br>Dwarf Sperm Whale [85043]   |        | Species or species habitat may occur within area       |
| <a href="#">Lagenorhynchus obscurus</a><br>Dusky Dolphin [43]   |        | Species or species habitat likely to occur within area |
| <a href="#">Lissodelphis peronii</a><br>Southern Right Whale Dolphin [44]   |        | Species or species habitat may occur within area       |
| <a href="#">Megaptera novaeangliae</a><br>Humpback Whale [38]   |        | Species or species habitat known to occur within area  |
| <a href="#">Mesoplodon bowdoini</a><br>Andrew's Beaked Whale [73]   |        | Species or species habitat may occur within area       |
| <a href="#">Mesoplodon densirostris</a><br>Blainville's Beaked Whale, Dense-beaked Whale [74]                         |        | Species or species habitat may occur within area       |
| <a href="#">Mesoplodon hectori</a><br>Hector's Beaked Whale [76]  |        | Species or species habitat may occur within area       |
| <a href="#">Mesoplodon layardii</a><br>Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556] |        | Species or species habitat may occur within area       |
| <a href="#">Mesoplodon mirus</a><br>True's Beaked Whale [54]  |        | Species or species habitat may occur within area       |
| <a href="#">Orcinus orca</a><br>Killer Whale, Orca [46]   |        | Species or species habitat likely to occur within area |

| Current Scientific Name  | Status | Type of Presence                                       |
|--|--------|--|
| <a href="#">Physeter macrocephalus</a><br>Sperm Whale [59]   |        | Species or species habitat may occur within area       |
| <a href="#">Pseudorca crassidens</a><br>False Killer Whale [48]  |        | Species or species habitat likely to occur within area |
| <a href="#">Tursiops aduncus</a><br>Indian Ocean Bottlenose Dolphin,<br>Spotted Bottlenose Dolphin [68418] |        | Species or species habitat likely to occur within area |
| <a href="#">Tursiops truncatus s. str.</a><br>Bottlenose Dolphin [68417]                                   |        | Species or species habitat may occur within area       |
| <a href="#">Ziphius cavirostris</a><br>Cuvier's Beaked Whale, Goose-beaked Whale [56]                      |        | Species or species habitat may occur within area       |

| Australian Marine Parks |                             | [ <a href="#">Resource Information</a> ] |
|-------------------------|-----------------------------|--|
| Park Name               | Zone & IUCN Categories      |  |
| Beagle                  | Multiple Use Zone (IUCN VI) |  |

## Extra Information

| State and Territory Reserves  |                          |       | [ <a href="#">Resource Information</a> ] |
|-------------------------------|--------------------------|-------|--|
| Protected Area Name           | Reserve Type             | State |  |
| Agnes Falls S.R.              | Natural Features Reserve | VIC   |  |
| Anderson Islands              | Conservation Area        | TAS   |  |
| Andersons Creek               | Regional Reserve         | TAS   |  |
| Andrew Bay - Grebe Bay G.L.R. | Natural Features Reserve | VIC   |  |
| Anser Island                  | Reference Area           | VIC   |  |
| Arthur Bay                    | Conservation Area        | TAS   |  |
| Avon-Perry River Delta G.L.R  | Natural Features Reserve | VIC   |  |
| Avon River SS.R.              | Natural Features Reserve | VIC   |  |

| Protected Area Name           | Reserve Type                | State |
|-------------------------------|-----------------------------|-------|
| Backwater Morass G.L.R.       | Natural Features Reserve    | VIC   |
| Badger Head                   | Conservation Covenant       | TAS   |
| Badger Island                 | Indigenous Protected Area   | TAS   |
| Bairnsdale F.R.               | Nature Conservation Reserve | VIC   |
| Bancroft Bay - Kalimna G.L.R. | Natural Features Reserve    | VIC   |
| Bass Pyramid                  | Nature Reserve              | TAS   |
| Battery Island                | Conservation Area           | TAS   |
| Baxter Island G.L.R.          | Natural Features Reserve    | VIC   |
| Baynes Island                 | Nature Reserve              | TAS   |
| Bellingham                    | Conservation Covenant       | TAS   |
| Bellingham Vineyard #1        | Conservation Covenant       | TAS   |
| Bellingham Vineyard #2        | Conservation Covenant       | TAS   |
| Bengworden N.C.R.             | Natural Features Reserve    | VIC   |
| Big Green Island              | Nature Reserve              | TAS   |
| Big Silver                    | Conservation Covenant       | TAS   |
| Binginwarri H15 B.R           | Natural Features Reserve    | VIC   |
| Binginwarri H18 B.R           | Natural Features Reserve    | VIC   |
| Binginwarri H19 B.R           | Natural Features Reserve    | VIC   |
| Binginwarri H43 B.R           | Natural Features Reserve    | VIC   |
| Blairgowrie Falls             | Conservation Covenant       | TAS   |
| Blond Bay G.L.R.              | Natural Features Reserve    | VIC   |
| Blond Bay W.R.                | Natural Features Reserve    | VIC   |

| Protected Area Name             | Reserve Type                | State |
|---------------------------------|-----------------------------|-------|
| Blyth Point                     | Conservation Area           | TAS   |
| Boat Harbour Road Killiecrankie | Conservation Covenant       | TAS   |
| Boobyalla                       | Conservation Area           | TAS   |
| Boobyalla Park                  | Conservation Covenant       | TAS   |
| Boxen Island                    | Conservation Area           | TAS   |
| Briddale                        | Conservation Covenant       | TAS   |
| Brid River                      | Conservation Area           | TAS   |
| Briggs                          | Regional Reserve            | TAS   |
| Brougham Sugarloaf              | Conservation Area           | TAS   |
| Bruthen Creek SS.R.             | Natural Features Reserve    | VIC   |
| Bruthen F.R                     | Nature Conservation Reserve | VIC   |
| Budgeree B.R.                   | Natural Features Reserve    | VIC   |
| Bun Beetons Point               | Conservation Area           | TAS   |
| Callignee B.R                   | Natural Features Reserve    | VIC   |
| Callignee W.R                   | Nature Conservation Reserve | VIC   |
| Cameron                         | Regional Reserve            | TAS   |
| Cape Portland                   | Conservation Area           | TAS   |
| Carisbrooke                     | Conservation Covenant       | TAS   |
| Carrajung H23 B.R               | Natural Features Reserve    | VIC   |
| Carrajung H34 B.R               | Natural Features Reserve    | VIC   |
| Chalky Island                   | Conservation Area           | TAS   |
| Chappell Islands                | Nature Reserve              | TAS   |
| Clovelly                        | Conservation Covenant       | TAS   |
| Clydebank Frontage G.L.R.       | Natural Features Reserve    | VIC   |

| Protected Area Name                  | Reserve Type                                  | State |
|--------------------------------------|---|-------|
| Clydebank Morass W.R.                | Natural Features Reserve                      | VIC   |
| Cone Islet                           | Conservation Area                             | TAS   |
| Cooks Gully F.R                      | Nature Conservation Reserve                   | VIC   |
| Corner Inlet                         | Marine National Park                          | VIC   |
| Corner Inlet Marine and Coastal Park | National Parks Act Schedule 4 park or reserve | VIC   |
| Craggy Island                        | Conservation Area                             | TAS   |
| Curtis Island                        | Nature Reserve                                | TAS   |
| Dans Hill                            | Conservation Area                             | TAS   |
| Darling Range                        | Conservation Area                             | TAS   |
| Darriman H29 B.R                     | Natural Features Reserve                      | VIC   |
| Darriman H33 B.R                     | Natural Features Reserve                      | VIC   |
| Den Ranges                           | Regional Reserve                              | TAS   |
| Devils Tower                         | Nature Reserve                                | TAS   |
| Devon B.R.                           | Natural Features Reserve                      | VIC   |
| Don Heads                            | Conservation Area                             | TAS   |
| Double Sandy Point                   | Conservation Area                             | TAS   |
| Doughboy Island                      | Conservation Area                             | TAS   |
| Dowd Morass W.R.                     | Natural Features Reserve                      | VIC   |
| Dunbarton                            | Conservation Covenant                         | TAS   |
| Eagle Point G.L.R.                   | Natural Features Reserve                      | VIC   |
| East Kangaroo Island                 | Nature Reserve                                | TAS   |
| East Moncoeur Island                 | Conservation Area                             | TAS   |
| Egg Beach                            | Conservation Area                             | TAS   |

| Protected Area Name                   | Reserve Type                | State |
|---------------------------------------|-----------------------------|-------|
| Emita                                 | Nature Recreation Area      | TAS   |
| Emu Ground                            | Regional Reserve            | TAS   |
| Entrance Point                        | Reference Area              | VIC   |
| Esmerelda Enterprises                 | Conservation Covenant       | TAS   |
| Fannys Bay                            | Conservation Area           | TAS   |
| Five Mile Bluff                       | Conservation Area           | TAS   |
| Flannagan Island G.L.R.               | Natural Features Reserve    | VIC   |
| Foochow                               | Conservation Area           | TAS   |
| Forester Rd North Scottsdale #1       | Conservation Covenant       | TAS   |
| Forester Rd North Scottsdale #2       | Conservation Covenant       | TAS   |
| Foster Islands                        | Nature Reserve              | TAS   |
| Fotheringate Bay                      | Conservation Area           | TAS   |
| Fraser Island G.L.R.                  | Natural Features Reserve    | VIC   |
| Fresh-water Swamp, Woodside Beach W.R | Natural Features Reserve    | VIC   |
| Gees Marsh Rd Bellingham              | Conservation Covenant       | TAS   |
| George Town                           | Conservation Area           | TAS   |
| Giffard (Rifle Range) F.R.            | Nature Conservation Reserve | VIC   |
| Giffard H30 B.R                       | Natural Features Reserve    | VIC   |
| Giffard H31 B.R                       | Natural Features Reserve    | VIC   |
| Gippsland Lakes Coastal Park          | Conservation Park           | VIC   |
| Goose Island                          | Conservation Area           | TAS   |
| Gormandale F.R                        | Nature Conservation Reserve | VIC   |
| Granite Point                         | Conservation Area           | TAS   |
| Great Dog Island                      | Indigenous Protected Area   | TAS   |

| Protected Area Name          | Reserve Type                | State |
|------------------------------|-----------------------------|-------|
| Greens Beach                 | Conservation Area           | TAS   |
| Greens Beach Rd Greens Beach | Conservation Covenant       | TAS   |
| Greig Creek SS.R.            | Natural Features Reserve    | VIC   |
| Gunyah Rainforest S.R.       | Natural Features Reserve    | VIC   |
| Hawley                       | Nature Reserve              | TAS   |
| Heart Morass W.R             | Natural Features Reserve    | VIC   |
| Herb Guyatt F.R.             | Nature Conservation Reserve | VIC   |
| Hogan Group                  | Conservation Area           | TAS   |
| Holey Plains                 | State Park                  | VIC   |
| Hollands Landing G.L.R.      | Natural Features Reserve    | VIC   |
| Holts Point                  | Conservation Area           | TAS   |
| Isabella Island              | Nature Reserve              | TAS   |
| Jack River SS.R.             | Natural Features Reserve    | VIC   |
| Jack Smith Lake W.R          | Natural Features Reserve    | VIC   |
| Jacksons Cove                | Conservation Area           | TAS   |
| Jones Bay G.L.R              | Natural Features Reserve    | VIC   |
| Jones Bay W.R                | Natural Features Reserve    | VIC   |
| Kangaroo Swamp N.C.R.        | Natural Features Reserve    | VIC   |
| Kent Group                   | National Park               | TAS   |
| Killiecrankie                | Nature Recreation Area      | TAS   |
| Kuhns Rd Memana              | Conservation Covenant       | TAS   |
| Lackrana                     | Conservation Area           | TAS   |
| Lake Coleman W.R             | Natural Features Reserve    | VIC   |

| Protected Area Name      | Reserve Type              | State |
|--------------------------|---------------------------|-------|
| Lake Coleman West W.R    | Natural Features Reserve  | VIC   |
| Lake Denison W.R         | Natural Features Reserve  | VIC   |
| Lake Kakydra G.L.R       | Natural Features Reserve  | VIC   |
| Lake Melanydra G.L.R.    | Natural Features Reserve  | VIC   |
| Lefroy                   | Regional Reserve          | TAS   |
| Lillico Beach            | Conservation Area         | TAS   |
| Little Boobyalla River   | Conservation Area         | TAS   |
| Little Chalky Island     | Conservation Area         | TAS   |
| Little Dog Island        | Game Reserve              | TAS   |
| Little Forester River    | Conservation Covenant     | TAS   |
| Little Island            | Conservation Area         | TAS   |
| Little Silver            | Conservation Covenant     | TAS   |
| Little Swan Island       | Nature Reserve            | TAS   |
| Little Waterhouse Island | Nature Reserve            | TAS   |
| Longford N.F.R           | Natural Features Reserve  | VIC   |
| Long Island              | Conservation Area         | TAS   |
| Long Reach               | Conservation Area         | TAS   |
| Low Head                 | Historic Site             | TAS   |
| Low Head                 | Conservation Area         | TAS   |
| Low Point                | Conservation Area         | TAS   |
| Lughrata                 | Conservation Covenant     | TAS   |
| lungatalanana            | Indigenous Protected Area | TAS   |
| Macks Creek              | Reference Area            | VIC   |
| Macleod Morass W.R.      | Natural Features Reserve  | VIC   |

| Protected Area Name                 | Reserve Type                | State |
|-------------------------------------|-----------------------------|-------|
| Mandel                              | Conservation Covenant       | TAS   |
| Marriott Reef                       | Conservation Area           | TAS   |
| Marshall Beach                      | Conservation Area           | TAS   |
| Martins Hill                        | Regional Reserve            | TAS   |
| Maslins Road Jetsonville            | Conservation Covenant       | TAS   |
| Meerlieu I15 B.R.                   | Natural Features Reserve    | VIC   |
| Meerlieu I16 B.R                    | Natural Features Reserve    | VIC   |
| Merrimans Creek F.R.                | Nature Conservation Reserve | VIC   |
| Mersey Bluff                        | State Reserve               | TAS   |
| Metung B.R.                         | Natural Features Reserve    | VIC   |
| Middle Arm                          | Conservation Area           | TAS   |
| Middle Island                       | Conservation Area           | TAS   |
| Mile Island                         | Conservation Area           | TAS   |
| Mitchell and Wonnangatta Rivers     | Heritage River              | VIC   |
| Mitchell River Silt Jetties G.L.R.  | Natural Features Reserve    | VIC   |
| Mitchell River water reserve G.L.R. | Natural Features Reserve    | VIC   |
| Moormurng F.F.R.                    | Nature Conservation Reserve | VIC   |
| Morley Swamp G.L.R.                 | Natural Features Reserve    | VIC   |
| Morwell                             | National Park               | VIC   |
| Mount Chappell Island               | Indigenous Protected Area   | TAS   |
| Mount Direction                     | Historic Site               | TAS   |
| Mount Horror                        | Regional Reserve            | TAS   |
| Mount Tanner                        | Nature Recreation Area      | TAS   |

| Protected Area Name              | Reserve Type                                  | State |
|----------------------------------|---|-------|
| Mount Vereker Creek              | Natural Catchment Area                        | VIC   |
| Mulligans Hill                   | Conservation Covenant                         | TAS   |
| Mulligans Hill                   | Conservation Area                             | TAS   |
| Mullungdung                      | Reference Area                                | VIC   |
| Mullungdung F.F.R                | Nature Conservation Reserve                   | VIC   |
| Musselroe Bay                    | Conservation Area                             | TAS   |
| Narawntapu                       | National Park                                 | TAS   |
| Neds Reef                        | Conservation Area                             | TAS   |
| Nicholson floodplain G.L.R       | Natural Features Reserve                      | VIC   |
| Night Island                     | Conservation Area                             | TAS   |
| Ninety Mile Beach                | Marine National Park                          | VIC   |
| Ninth Island                     | Conservation Area                             | TAS   |
| Nooramunga Marine & Coastal Park | National Parks Act Schedule 4 park or reserve | VIC   |
| North East Islet                 | Nature Reserve                                | TAS   |
| North East River                 | Game Reserve                                  | TAS   |
| North Scottsdale                 | Regional Reserve                              | TAS   |
| Nungurner B.R.                   | Natural Features Reserve                      | VIC   |
| Nyerimilang Park G.L.R.          | Natural Features Reserve                      | VIC   |
| Old Waterhouse Rd Scottsdale     | Conservation Covenant                         | TAS   |
| Oxberry Plains                   | Regional Reserve                              | TAS   |
| Oyster Rocks                     | Conservation Area                             | TAS   |
| Palana Beach                     | Nature Recreation Area                        | TAS   |
| Panatana                         | Conservation Covenant                         | TAS   |
| Pardoe Northdown                 | Conservation Area                             | TAS   |

| Protected Area Name                            | Reserve Type                | State |
|--|-----------------------------|-------|
| Pasco Group                                    | Conservation Area           | TAS   |
| Patriarchs                                     | Private Sanctuary           | TAS   |
| Patriarchs                                     | Conservation Area           | TAS   |
| Peaked Hill                                    | Regional Reserve            | TAS   |
| Pipers River Road                              | Conservation Covenant       | TAS   |
| Poddy Bay G.L.R.                               | Natural Features Reserve    | VIC   |
| Point Fullarton G.L.R.                         | Natural Features Reserve    | VIC   |
| Port Sorell                                    | Conservation Area           | TAS   |
| Prime Seal Island                              | Conservation Area           | TAS   |
| Providence Ponds F.F.R.                        | Nature Conservation Reserve | VIC   |
| Pulp Mill - Four Mile Creek Wildlife Sanctuary | Conservation Covenant       | TAS   |
| Ram Island                                     | Conservation Area           | TAS   |
| Raymond Island G.L.R.                          | Natural Features Reserve    | VIC   |
| Redbank SS.R.                                  | Natural Features Reserve    | VIC   |
| Redbill Point                                  | Conservation Area           | TAS   |
| Red Morass G.L.R.                              | Natural Features Reserve    | VIC   |
| Reedy Lagoon                                   | Private Nature Reserve      | TAS   |
| Reef Island                                    | Conservation Area           | TAS   |
| Rigby Island G.L.R.                            | Natural Features Reserve    | VIC   |
| Ringarooma Tier - Rushy Lagoon                 | Conservation Covenant       | TAS   |
| Rodondo Island                                 | Nature Reserve              | TAS   |
| Rosedale B.R.                                  | Natural Features Reserve    | VIC   |
| Roseneath Peninsula (1) G.L.R.                 | Natural Features Reserve    | VIC   |

| Protected Area Name                  | Reserve Type   | State |
|--------------------------------------|--|-------|
| Roseneath Peninsula (2) G.L.R.       | Natural Features Reserve                                 | VIC   |
| Roydon Island                        | Conservation Area  | TAS   |
| Rubicon Sanctuary                    | Conservation Covenant                                    | TAS   |
| Sale Camping Reserve G.L.R.          | Natural Features Reserve                                 | VIC   |
| Sale Common N.C.R.                   | Nature Conservation Reserve                              | VIC   |
| Salt Lake - Backwater Morass G.L.R.  | Natural Features Reserve                                 | VIC   |
| Seal Islands W.R.                    | Nature Conservation Reserve                              | VIC   |
| Sellars Lagoon                       | Game Reserve   | TAS   |
| Sentinel Island                      | Conservation Area  | TAS   |
| Settlement Point                     | Conservation Area  | TAS   |
| Shag Lagoon                          | Conservation Area  | TAS   |
| Shiny Grasstrees                     | Conservation Covenant                                    | TAS   |
| Sidmouth                             | Conservation Area  | TAS   |
| Single Tree Plain                    | Conservation Area  | TAS   |
| Sister Islands                       | Conservation Area  | TAS   |
| Slaughterhouse Creek G.L.R           | Natural Features Reserve                                 | VIC   |
| Southern Wilsons Promontory          | Remote and Natural Area - Schedule 6, National Parks Act | VIC   |
| South Pats River                     | Conservation Area  | TAS   |
| Spike Island                         | Conservation Area  | TAS   |
| Steel Bay - Newland Backwater G.L.R. | Natural Features Reserve                                 | VIC   |
| Stradbroke F.F.R.                    | Nature Conservation Reserve                              | VIC   |
| Strzelecki                           | National Park  | TAS   |
| Sugarloaf Rock                       | Conservation Area  | TAS   |

| Protected Area Name                  | Reserve Type                | State |
|--------------------------------------|-----------------------------|-------|
| Summer Camp                          | Conservation Area           | TAS   |
| Summerhill Drive Port Sorell         | Conservation Covenant       | TAS   |
| Swan Reach Bay G.L.R.                | Natural Features Reserve    | VIC   |
| Swell Point - Roseneath Point G.L.R. | Natural Features Reserve    | VIC   |
| Sydney Cove                          | Historic Site               | TAS   |
| Tamar                                | Conservation Area           | TAS   |
| Tambo Delta - Metung G.L.R.          | Natural Features Reserve    | VIC   |
| Tarra-Bulga                          | National Park               | VIC   |
| Tarra River SS.R.                    | Natural Features Reserve    | VIC   |
| Tarra Tarra B.R                      | Natural Features Reserve    | VIC   |
| Tenth Island                         | Nature Reserve              | TAS   |
| The Billabong F.F.R.                 | Nature Conservation Reserve | VIC   |
| The Dardenelles G.L.R                | Natural Features Reserve    | VIC   |
| The Dock                             | Conservation Covenant       | TAS   |
| The Dutchman                         | Conservation Area           | TAS   |
| The Lakes                            | National Park               | VIC   |
| The Waterhole G.L.R                  | Natural Features Reserve    | VIC   |
| Thomson River SS.R.                  | Natural Features Reserve    | VIC   |
| Three Sisters-Goat Island            | Nature Reserve              | TAS   |
| Tiffanys Park                        | Conservation Covenant       | TAS   |
| Tippogoree Hills                     | Conservation Area           | TAS   |
| Toms Cap S.R.                        | Natural Features Reserve    | VIC   |
| Toora H37 B.R                        | Natural Features Reserve    | VIC   |

| Protected Area Name                | Reserve Type                | State |
|------------------------------------|-----------------------------|-------|
| Toora H41 B.R                      | Natural Features Reserve    | VIC   |
| Traralgon Creek (Yerang Park) F.R. | Nature Conservation Reserve | VIC   |
| Traralgon South F.F.R.             | Nature Conservation Reserve | VIC   |
| Traralgon South F.R                | Nature Conservation Reserve | VIC   |
| Trousers Point Beach               | Conservation Area           | TAS   |
| Tucker Swamp G.L.R                 | Natural Features Reserve    | VIC   |
| Umtali #1                          | Conservation Covenant       | TAS   |
| Umtali #2                          | Conservation Covenant       | TAS   |
| Unnamed (Badger Corner)            | Conservation Area           | TAS   |
| Unnamed (Badger Head Road)         | Conservation Area           | TAS   |
| Unnamed (Pipers Brook)             | Conservation Area           | TAS   |
| Unnamed P0155                      | Private Nature Reserve      | VIC   |
| Unnamed P0190                      | Private Nature Reserve      | VIC   |
| Unnamed P0191                      | Private Nature Reserve      | VIC   |
| Unnamed P0207                      | Private Nature Reserve      | VIC   |
| Unnamed P0267                      | Private Nature Reserve      | VIC   |
| Vereker Creek                      | Reference Area              | VIC   |
| Victoria Lagoon G.L.R.             | Natural Features Reserve    | VIC   |
| Warrigal Creek SS.R.               | Natural Features Reserve    | VIC   |
| Waterhouse                         | Conservation Area           | TAS   |
| Waterhouse Island                  | Conservation Area           | TAS   |
| Wattle Point G.L.R.                | Natural Features Reserve    | VIC   |
| Welshpool H16 B.R                  | Natural Features Reserve    | VIC   |

| Protected Area Name                | Reserve Type   | State |
|------------------------------------|--|-------|
| Welshpool H17 B.R                  | Natural Features Reserve                                 | VIC   |
| West Arm                           | Conservation Area  | TAS   |
| West Moncoeur Island               | Nature Reserve   | TAS   |
| Willung B.R                        | Natural Features Reserve                                 | VIC   |
| Willung South B.R.                 | Natural Features Reserve                                 | VIC   |
| Wilson's Promontory                | Wilderness Zone  | VIC   |
| Wilson's Promontory                | National Park  | VIC   |
| Wilson's Promontory                | Marine National Park                                     | VIC   |
| Wilson's Promontory Islands        | Remote and Natural Area - Schedule 6, National Parks Act | VIC   |
| Wilson's Promontory Marine Park    | National Parks Act Schedule 4 park or reserve            | VIC   |
| Wilson's Promontory Marine Reserve | National Parks Act Schedule 4 park or reserve            | VIC   |
| Wingaroo                           | Nature Reserve   | TAS   |
| Won Wron F.R                       | Nature Conservation Reserve                              | VIC   |
| Won Wron H21 B.R                   | Natural Features Reserve                                 | VIC   |
| Won Wron H22 B.R                   | Natural Features Reserve                                 | VIC   |
| Woodside F.R                       | Nature Conservation Reserve                              | VIC   |
| Woodside H25 B.R                   | Natural Features Reserve                                 | VIC   |
| Woodside H26 B.R.                  | Natural Features Reserve                                 | VIC   |
| Woodside H27 B.R                   | Natural Features Reserve                                 | VIC   |
| Woodside H28 B.R                   | Natural Features Reserve                                 | VIC   |

| Protected Area Name    | Reserve Type             | State |
|------------------------|--------------------------|-------|
| Woranga B.R            | Natural Features Reserve | VIC   |
| Wright and Egg Islands | Conservation Area        | TAS   |
| Wright Rock            | Nature Reserve           | TAS   |
| Wybalenna Island       | Conservation Area        | TAS   |
| Yeerung B.R.           | Natural Features Reserve | VIC   |
| Yinnar B.R             | Natural Features Reserve | VIC   |
| Yorktown               | Historic Site            | TAS   |
| Youngs Creek           | Conservation Area        | TAS   |

## Regional Forest Agreements [\[ Resource Information \]](#)

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

| RFA Name                      | State    |
|-------------------------------|----------|
| <a href="#">Gippsland RFA</a> | Victoria |
| <a href="#">Tasmania RFA</a>  | Tasmania |

## Nationally Important Wetlands [\[ Resource Information \]](#)

| Wetland Name                                       | State |
|--|-------|
| <a href="#">Billabong Flora and Fauna Reserve</a>  | VIC   |
| <a href="#">Blackmans Lagoon</a>                   | TAS   |
| <a href="#">Bosses/Nebbor Swamp</a>                | VIC   |
| <a href="#">Corner Inlet</a>                       | VIC   |
| <a href="#">Fergusons Lagoon</a>                   | TAS   |
| <a href="#">Hogans Lagoon</a>                      | TAS   |
| <a href="#">Jack Smith Lake State Game Reserve</a> | VIC   |
| <a href="#">Lake King Wetlands</a>                 | VIC   |
| <a href="#">Lake Victoria Wetlands</a>             | VIC   |
| <a href="#">Lake Wellington Wetlands</a>           | VIC   |
| <a href="#">Little Waterhouse Lake</a>             | TAS   |

| Wetland Name  | State |
|---|-------|
| <a href="#">Macleod Morass</a>                          | VIC   |
| <a href="#">Russells Swamp</a>                          | VIC   |
| <a href="#">Sellars Lagoon</a>                          | TAS   |
| <a href="#">Stans Lagoon</a>                            | TAS   |
| <a href="#">Surveyors Creek</a>                         | TAS   |
| <a href="#">Tambo River (Lower Reaches) East Swamps</a> | VIC   |
| <a href="#">The Chimneys</a>                            | TAS   |
| <a href="#">Thompsons Lagoon</a>                        | TAS   |
| <a href="#">Tregaron Lagoons 1</a>                      | TAS   |
| <a href="#">Tregaron Lagoons 2</a>                      | TAS   |
| <a href="#">Unnamed wetland</a>                         | TAS   |
| <a href="#">Unnamed Wetland</a>                         | TAS   |
| <a href="#">Unnamed Wetland</a>                         | TAS   |
| <a href="#">Unnamed Wetland</a>                         | TAS   |
| <a href="#">Unnamed Wetland</a>                         | TAS   |
| <a href="#">Unnamed Wetland</a>                         | TAS   |
| <a href="#">Unnamed Wetland</a>                         | TAS   |
| <a href="#">Unnamed Wetland</a>                         | TAS   |
| <a href="#">Unnamed Wetland</a>                         | TAS   |
| <a href="#">Unnamed Wetland</a>                         | TAS   |

| EPBC Act Referrals   |            |                  | <a href="#">[ Resource Information ]</a> |
|--|------------|------------------|--|
| Title of referral  | Reference  | Referral Outcome | Assessment Status                        |
| <a href="#">Bairnsdale Airport Upgrade</a>                 | 2024/09848 |                  | Referral Decision                        |
| <a href="#">Barnes Hill Nickel Laterite Project</a>        | 2009/5121  |                  | Completed                                |
| <a href="#">Bell Bay Wind Farm</a>                         | 2024/09868 |                  | Assessment                               |
| <a href="#">Blue Marlin Offshore Wind Energy Project</a>   | 2023/09532 |                  | Referral Decision                        |
| <a href="#">Boardwalk replacement and upgrades project</a> | 2023/09488 |                  | Completed                                |

| Title of referral   | Reference  | Referral Outcome | Assessment Status |
|---|------------|------------------|-------------------|
| <a href="#">Gelliondale Wind Farm Project</a>   | 2023/09577 |                  | Assessment        |
| <a href="#">Gippsland Offshore Wind Farm Marine Survey Investigations</a>                                   | 2023/09682 |                  | Completed         |
| <a href="#">Gippsland Renewable Energy Zone Project</a>   | 2022/09346 |                  | Assessment        |
| <a href="#">Greater Gippsland Offshore Wind Project</a>   | 2022/09379 |                  | Assessment        |
| <a href="#">Greater Gippsland Offshore Wind Project Initial Marine Field Investigations</a>                 | 2022/09374 |                  | Completed         |
| <a href="#">H2TAS (Hydrogen Tasmania) Renewable Hydrogen and Ammonia Facility</a>                           | 2022/09365 |                  | Completed         |
| <a href="#">Hazelwood Mine Rehabilitation Project</a>   | 2022/09239 |                  | Assessment        |
| <a href="#">Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East</a>               | 2024/09795 |                  | Completed         |
| <a href="#">Motorcycle Training and Racing Track</a>  | 2023/09448 |                  | Completed         |
| <a href="#">North East Wind - construction and operation of wind turbines and associated infrastructure</a> | 2022/09388 |                  | Assessment        |
| <a href="#">Preliminary Site Investigations for Great Eastern Offshore Wind Project</a>                     | 2024/09890 |                  | Referral Decision |
| <a href="#">Sassafras - Wesley Vale Irrigation Scheme Augmentation</a>                                      | 2023/09666 |                  | Assessment        |
| <a href="#">Seadragon Offshore Wind, Early Marine Surveys</a>   | 2023/09670 |                  | Completed         |
| <a href="#">Seadragon Offshore Wind Farm</a>  | 2022/9163  |                  | Completed         |
| <a href="#">Shearwater - Paynesville Residential Development</a>  | 2023/09592 |                  | Assessment        |
| <a href="#">South East Australia Carbon Capture and Storage Project, Commonwealth waters</a>                | 2023/09732 |                  | Referral Decision |
| <a href="#">South East Australia Carbon Capture and Storage Project, Onshore and State waters</a>           | 2023/09731 |                  | Referral Decision |

Controlled action

| Title of referral   | Reference | Referral Outcome  | Assessment Status   |
|---|-----------|-------------------|---------------------|
| <b>Controlled action</b>  |           |                   |                     |
| <a href="#">Alberton Wind Farm, Sth Gippsland, Vic</a>  | 2017/7854 | Controlled Action | Post-Approval       |
| <a href="#">Bridport Main Road Upgrade</a>  | 2012/6515 | Controlled Action | Completed           |
| <a href="#">Constructed wetland in Macleod Morass</a>   | 2000/14   | Controlled Action | Post-Approval       |
| <a href="#">Construction of NW Homemaker Shopping Centre</a>                                    | 2009/4835 | Controlled Action | Post-Approval       |
| <a href="#">Develop an Offshore Tidal Energy Facility</a>                                       | 2008/4518 | Controlled Action | Completed           |
| <a href="#">Gippsland Lakes Mosquito Control Aerial /Hovercraft Spraying</a>                    | 2001/491  | Controlled Action | Completed           |
| <a href="#">Gippsland Regional Port Project</a>   | 2020/8667 | Controlled Action | Assessment Approach |
| <a href="#">Golden Beach Gas Project</a>  | 2019/8513 | Controlled Action | Post-Approval       |
| <a href="#">Gunns Bleached Kraft Pulp Mill, Longreach (near Bell Bay)</a>                       | 2005/2262 | Controlled Action | Completed           |
| <a href="#">Gunns Bleached Kraft Pulp Mill at Long Reach (near Bell Bay) or near Hampshire</a>  | 2004/1914 | Controlled Action | Completed           |
| <a href="#">Installation of replacement crude-condensate pipeline, Vic</a>                      | 2014/7202 | Controlled Action | Post-Approval       |
| <a href="#">Kraft Pulp Mill and ancillary chemical production and infrastructure</a>            | 2007/3385 | Controlled Action | Post-Approval       |
| <a href="#">Latrobe River Bridge Replacement Project, Tyers Road, Vic</a>                       | 2017/8052 | Controlled Action | Post-Approval       |
| <a href="#">Low Head Wind Farm, TAS</a>   | 2012/6450 | Controlled Action | Post-Approval       |
| <a href="#">Maintenance Dredging of Toora Boat Ramp Channel</a>                                 | 2008/4376 | Controlled Action | Completed           |
| <a href="#">Multi-lot Industrial Subdivision and Associated Works, east of Leasons Road, we</a> | 2009/4808 | Controlled Action | Post-Approval       |
| <a href="#">Musselroe Wind Farm</a>   | 2002/683  | Controlled Action | Post-Approval       |
| <a href="#">Princes Highway Duplication - Traralgon East to Fulham</a>                          | 2010/5640 | Controlled Action | Post-Approval       |

| Title of referral   | Reference | Referral Outcome      | Assessment Status |
|---|-----------|-----------------------|-------------------|
| <b>Controlled action</b>  |           |                       |                   |
| <a href="#">Riviera Harbours Development (Stages 8D and 3rd entrance channel)</a>                                       | 2002/732  | Controlled Action     | Post-Approval     |
| <a href="#">Rural residential subdivision into 13 new allotments</a>  | 2008/4505 | Controlled Action     | Post-Approval     |
| <a href="#">Star of the South Offshore Wind Farm Project</a>  | 2020/8650 | Controlled Action     | Guidelines Issued |
| <a href="#">Tasmania Natural Gas Project - Stage 2</a>  | 2001/211  | Controlled Action     | Post-Approval     |
| <a href="#">Thomson River Mercury Recovery Project</a>  | 2010/5734 | Controlled Action     | Completed         |
| <a href="#">Water Pipeline</a>  | 2010/5327 | Controlled Action     | Post-Approval     |
| <a href="#">Wellington Waters Canal Estate</a>  | 2001/332  | Controlled Action     | Completed         |
| <a href="#">West Mine Development</a>   | 2002/903  | Controlled Action     | Post-Approval     |
| <a href="#">West Sale Airport Runway Extension, Vic</a>   | 2017/8106 | Controlled Action     | Post-Approval     |
| <a href="#">Windfarm</a>  | 2003/1109 | Controlled Action     | Completed         |
| <a href="#">Yallourn Combined Cycle Gas Trubine (CCGT) Power Station</a>  | 2010/5516 | Controlled Action     | Completed         |
| <a href="#">Yolla Gas Field (TRL1) Development</a>  | 2001/321  | Controlled Action     | Post-Approval     |
| <b>Not controlled action</b>  |           |                       |                   |
| <a href="#">2004/2005 drilling program for exploration and production (VIC 01-06, 09-11, 16, 18 &amp; 19 and VIC/RL</a> | 2003/1282 | Not Controlled Action | Completed         |
| <a href="#">2D seismic Survey in VIC/P55, VIC/RL2 and VIC/P41</a>   | 2004/1876 | Not Controlled Action | Completed         |
| <a href="#">55m lattice tower &amp; infrastructure</a>  | 2003/1159 | Not Controlled Action | Completed         |
| <a href="#">Acquisition of 2D seismic data in State Waters adjacent to Ninety Mile Beach-VIC/P39(V)</a>                 | 2004/1889 | Not Controlled Action | Completed         |
| <a href="#">Allmans Levee Track - Maintenance Work</a>  | 2003/1053 | Not Controlled Action | Completed         |

| Title of referral   | Reference | Referral Outcome      | Assessment Status |
|---|-----------|-----------------------|-------------------|
| <b>Not controlled action</b>  |           |                       |                   |
| <a href="#">Angas and Galloway Exploration Wells VIC/P39(v)</a>   | 2005/2330 | Not Controlled Action | Completed         |
| <a href="#">Avon River Railway Bridge and level crossing upgrade, Stratford, Vic</a>                                | 2018/8325 | Not Controlled Action | Completed         |
| <a href="#">Basker-Manta-Gummy Oil Development</a>  | 2011/6052 | Not Controlled Action | Completed         |
| <a href="#">Basker-Manta Oil Field Development</a>  | 2005/2026 | Not Controlled Action | Completed         |
| <a href="#">Bass Basin - Pee Jay-1 - Drilling Program</a>   | 2007/3908 | Not Controlled Action | Completed         |
| <a href="#">Beaconsfield Gold Mine Tailings Storage Facility</a>  | 2007/3303 | Not Controlled Action | Completed         |
| <a href="#">Beardie-1 Field wildcat oil well</a>  | 2001/505  | Not Controlled Action | Completed         |
| <a href="#">Biodiversity Impacts Audit</a>  | 2011/6191 | Not Controlled Action | Completed         |
| <a href="#">Boolarra Water Supply Augmentation</a>  | 2010/5555 | Not Controlled Action | Completed         |
| <a href="#">Bridport Road Upgrade - Maslins to Nourses Road</a>   | 2006/2553 | Not Controlled Action | Completed         |
| <a href="#">Communications tower extension</a>  | 2003/1099 | Not Controlled Action | Completed         |
| <a href="#">Construction of 165 Megalitre Dam at "Boobyalla Park"</a>   | 2004/1428 | Not Controlled Action | Completed         |
| <a href="#">Development of Kipper gas field within Vic/L3, Vic/L4 Vic/RL2</a>                                       | 2005/2484 | Not Controlled Action | Completed         |
| <a href="#">Development of Turrum Oil Field and associated infrastructure</a>                                       | 2003/1204 | Not Controlled Action | Completed         |
| <a href="#">Drilling and side track completion at Baleen gas production well in Production Licence area VIC/L21</a> | 2004/1535 | Not Controlled Action | Completed         |
| <a href="#">Drilling of 'Culverin' oil exploration well, permit VIC/P56</a>   | 2005/2279 | Not Controlled Action | Completed         |
| <a href="#">Drilling of Scallop-1 Exploration Well</a>  | 2003/917  | Not Controlled Action | Completed         |
| <a href="#">East Pilchard exploration well</a>  | 2001/137  | Not Controlled Action | Completed         |

| Title of referral  | Reference | Referral Outcome      | Assessment Status |
|--|-----------|-----------------------|-------------------|
| <b>Not controlled action</b>   |           |                       |                   |
| <a href="#">East Princess Highway Duplication</a>  | 2010/5332 | Not Controlled Action | Completed         |
| <a href="#">Gippsland Basin Seismic Programme</a>  | 2004/1866 | Not Controlled Action | Completed         |
| <a href="#">Gippsland Lakes Composting Toilet Program</a>  | 2000/66   | Not Controlled Action | Completed         |
| <a href="#">Hayes Hill Ridge Wind Farm</a>   | 2007/3437 | Not Controlled Action | Completed         |
| <a href="#">Hazelwood Westfield Mine Development</a>   | 2000/49   | Not Controlled Action | Completed         |
| <a href="#">Hemingway1/Oil Exploration</a>   | 2001/177  | Not Controlled Action | Completed         |
| <a href="#">Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</a> | 2015/7522 | Not Controlled Action | Completed         |
| <a href="#">INDIGO Central Submarine Telecommunications Cable</a>  | 2017/8127 | Not Controlled Action | Completed         |
| <a href="#">Kipper Tuna Turrum Project Maintenance Dredging</a>  | 2010/5430 | Not Controlled Action | Completed         |
| <a href="#">Line of Sight Clearing on the Eastern Corridor, Regional Fast Rail</a>                           | 2010/5481 | Not Controlled Action | Completed         |
| <a href="#">Longtom-3 Gas Appraisal Well, VIC/P54</a>  | 2005/2494 | Not Controlled Action | Completed         |
| <a href="#">Longtom Gas Pipeline Development, VIC/P54</a>  | 2006/3072 | Not Controlled Action | Completed         |
| <a href="#">Long Waterhole project, South Gippsland Highway</a>  | 2001/277  | Not Controlled Action | Completed         |
| <a href="#">Lower Latrobe River Wetlands: Water Regulation Infrastructure Project, Victoria</a>              | 2017/7999 | Not Controlled Action | Completed         |
| <a href="#">Loy Yang Battery Energy Storage System</a>   | 2021/8989 | Not Controlled Action | Completed         |
| <a href="#">Macleod Morass Over-Abundant Vegetation Management</a>   | 2012/6325 | Not Controlled Action | Completed         |
| <a href="#">Marlin-Snapper Gas Pipeline Project</a>  | 2006/3197 | Not Controlled Action | Completed         |
| <a href="#">Melville 1 Oil Exploration Well</a>  | 2001/167  | Not Controlled Action | Completed         |

| Title of referral  | Reference | Referral Outcome      | Assessment Status |
|--|-----------|-----------------------|-------------------|
| <b>Not controlled action</b>   |           |                       |                   |
| <a href="#">North East Tasmanian Access Study Stage 2 - New Road Construction - Western Approach to Scottsdale</a>   | 2003/1266 | Not Controlled Action | Completed         |
| <a href="#">Offshore Petroleum Exploration</a>   | 2001/289  | Not Controlled Action | Completed         |
| <a href="#">Offshore Seismic Survey</a>  | 2001/498  | Not Controlled Action | Completed         |
| <a href="#">Port Welshpool Harbour Dredging</a>  | 2007/3521 | Not Controlled Action | Completed         |
| <a href="#">Proposed development of Dalkeith Heights</a>   | 2007/3825 | Not Controlled Action | Completed         |
| <a href="#">Proposed Multi-lot Residential Subdivision, 75 Paynesville Road and 114 Newlands Drive, Paynesville.</a> | 2017/7896 | Not Controlled Action | Completed         |
| <a href="#">Pump station upgrades and rising main construction, Lakes Entrance, Victoria</a>                         | 2016/7646 | Not Controlled Action | Completed         |
| <a href="#">Rebuild of Existing Bleached Pulp Facilities at Maryvale Mill</a>  | 2005/2234 | Not Controlled Action | Completed         |
| <a href="#">Regional Fast Rail Project - Latrobe Valley Country Works Package</a>                                    | 2002/654  | Not Controlled Action | Completed         |
| <a href="#">Rising Main Upgrade Bridge Pumping Station to Wastewater Treatment Plant, Bairnsdale, VIC</a>            | 2014/7312 | Not Controlled Action | Completed         |
| <a href="#">Sale Golf Club Redevelopment and Residential Development</a>   | 2006/3162 | Not Controlled Action | Completed         |
| <a href="#">Scotia Mine/Alluvial tin and sapphire mine</a>   | 2006/3061 | Not Controlled Action | Completed         |
| <a href="#">Subdivision for Residential development</a>  | 2004/1823 | Not Controlled Action | Completed         |
| <a href="#">The 3000 Acres, clearing and development of native vegetation</a>  | 2006/3199 | Not Controlled Action | Completed         |
| <a href="#">To undertake maintenance dredging of the Toora Boat Ramp Channel, VIC</a>                                | 2014/7225 | Not Controlled Action | Completed         |
| <a href="#">Turrum Phase 2 Development Project</a>   | 2008/4191 | Not Controlled Action | Completed         |
| <a href="#">Vegetation Management, Macleod Morass Wildlife Reserve,</a>  | 2014/7265 | Not Controlled Action | Completed         |

| Title of referral  | Reference | Referral Outcome                          | Assessment Status |
|--|-----------|---|-------------------|
| <b>Not controlled action</b>                                     |           |   |                   |
| <u>Gippsland Lakes Ramsar Site, VIC</u>                          |           |   |                   |
| <u>West Triton Drilling Program - Gippsland Basin</u>            | 2007/3915 | Not Controlled Action                     | Completed         |
| <u>Windfarm</u>  | 2003/1100 | Not Controlled Action                     | Completed         |
| <u>Yallourn Coal Field Development</u>                           | 2001/297  | Not Controlled Action                     | Completed         |
| <u>Yallourn Pipeline Project</u>                                 | 2006/3004 | Not Controlled Action                     | Completed         |
| <b>Not controlled action (particular manner)</b>                 |           |   |                   |
| <u>2D &amp; 3D seismic survey T/39P</u>                          | 2005/2237 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <u>2D Seismic Aquisition Survey</u>                              | 2008/4041 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <u>2D Seismic Survey</u>   | 2008/4066 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <u>2D Seismic Survey</u>   | 2008/4131 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <u>2D seismic survey Permit Area VIC/P49</u>                     | 2006/2943 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <u>3D Seismic Survey</u>   | 2008/4528 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <u>Apache 3D seismic exploration survey</u>                      | 2006/3146 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <u>Barnes Hill and Mount Vulcan Exploration Drilling Program</u> | 2008/4353 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <u>Bass Basin 2D and 3D seismic surveys (T/38P &amp; T/37P)</u>  | 2007/3650 | Not Controlled Action (Particular         | Post-Approval     |

| Title of referral  | Reference | Referral Outcome                          | Assessment Status |
|--|-----------|---|-------------------|
| <b>Not controlled action (particular manner)</b>   |           |   |                   |
|  |           | Manner)                                   |                   |
| <a href="#">Bream 3D seismic survey</a>  | 2006/2556 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Construct 500Ml in-stream dam, Boobyalla Park</a>                                    | 2007/3927 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Construction of wharf</a>  | 2003/1050 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Country Passenger Rail Service Project - railway upgrade</a>                         | 2002/723  | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Creation of conservation covenant and sale of land for future residential develo</a> | 2009/4936 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Dalrymple 3D Seismic Survey</a>  | 2010/5680 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Gas Pipeline</a>   | 2000/20   | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Gippsland 2D Marine Seismic Survey - VIC/P-63, VIC/P-64 and T/46P</a>                | 2009/5241 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Gippsland Rail Line Upgrade - Longwarry East to Traralgon</a>                        | 2019/8564 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Golden Beach gas field development</a>   | 2003/1031 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Highway Realignment and Upgrade</a>  | 2009/4959 | Not Controlled Action (Particular Manner) | Post-Approval     |

| Title of referral  | Reference | Referral Outcome                          | Assessment Status |
|--|-----------|---|-------------------|
| <b>Not controlled action (particular manner)</b>   |           |   |                   |
| <a href="#">INDIGO Marine Cable Route Survey (INDIGO)</a>  | 2017/7996 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Inspection of project vessels for presence of invasive marine pests in Commonwealth waters off Victo</a> | 2012/6362 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Lakes Entrance Sand Management Program Trial Dredging</a>  | 2007/3694 | Not Controlled Action (Particular Manner) | Completed         |
| <a href="#">Lakes Entrance Sand Management Program Trial Dredging</a>  | 2007/3852 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Longtom-5 Offshore Production Drilling (Vic/L29), VIC</a>  | 2012/6498 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Longtom South -1 Exploration Drilling</a>  | 2011/6217 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Maintenance dredging of 150,000 cubic metres of sediment in Burnie Port and du</a>                       | 2004/1569 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Maintenance Dredging of Oceanic Sand</a>   | 2011/5932 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Non-exclusive 3-D Marine Seismic Survey, Bass Strait</a>   | 2002/775  | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Northern Fields 3D Seismic Survey</a>  | 2001/140  | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Pelican 3D Marine Seismic Survey, Gippsland Basin, Vic</a>   | 2017/8097 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Regional Fibre Optic Project (RFOP)</a>  | 2003/916  | Not Controlled Action (Particular         | Post-Approval     |

| Title of referral   | Reference | Referral Outcome                          | Assessment Status |
|---|-----------|---|-------------------|
| <b>Not controlled action (particular manner)</b>                                |           |   |                   |
|   |           | Manner)                                   |                   |
| <a href="#">Scottsdale Irrigation Scheme (SIS) - Tasmania</a>                   | 2017/7981 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Seismic Exploration in Permit VIC/P41</a>                           | 2001/267  | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Seismic Survey</a>  | 2001/206  | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Seismic survey, Gippsland Basin</a>                                 | 2001/525  | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Shearwater 2D and 3D marine seismic survey</a>                      | 2005/2180 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Soil and Organic Recycling Facility</a>                             | 2005/2216 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Southern Flanks 2D Marine Seismic Survey</a>                        | 2010/5288 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Southern Margins 3D Seismic Survey VIC/P55</a>                      | 2007/3780 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Tap Oil Ltd Molson 2D Seismic Survey T47P</a>                       | 2008/3967 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Tuskfish 3D Seismic Survey, Bass Strait</a>                         | 2002/864  | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">upgrade &amp; installation of facilities at West Sale Aerodrome</a> | 2011/5948 | Not Controlled Action (Particular Manner) | Post-Approval     |

| Title of referral  | Reference | Referral Outcome                          | Assessment Status |
|--|-----------|---|-------------------|
| <b>Not controlled action (particular manner)</b>   |           |   |                   |
| <a href="#">West Seahorse Oil Development Project, Commonwealth waters offshore Victoria</a> | 2013/6973 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Winnaleah Irrigation Scheme Augmentation</a>                                     | 2011/5798 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <b>Referral decision</b>   |           |   |                   |
| <a href="#">All actions taken in response to the current severe bushfires in Victoria.</a>   | 2009/4787 | Referral Decision                         | Completed         |
| <a href="#">Beardie-1 Field wildcat oil well</a>   | 2001/469  | Referral Decision                         | Completed         |
| <a href="#">Darymple 3D Seismic Survey, Petroleum Exploration Permit T/41P</a>               | 2010/5322 | Referral Decision                         | Completed         |
| <a href="#">Holloman 2010 Vic/P60 3D Seismic Acquisition Survey Program</a>                  | 2009/5251 | Referral Decision                         | Completed         |
| <a href="#">Longtom 5 Offshore Production Drilling (VIC/L29)</a>                             | 2012/6404 | Referral Decision                         | Completed         |
| <a href="#">Longtom-5 Offshore Production Drilling (Vic/L29)</a>                             | 2012/6413 | Referral Decision                         | Completed         |
| <a href="#">Mineral Exploration Ringarooma Bay</a>   | 2012/6508 | Referral Decision                         | Completed         |
| <a href="#">Scotia Mine Rehabilitation Project, TAS</a>                                      | 2012/6425 | Referral Decision                         | Completed         |
| <a href="#">Shark 3D Seismic Survey</a>  | 2007/3294 | Referral Decision                         | Completed         |

## Key Ecological Features [\[ Resource Information \]](#)

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

| Name                                   | Region     |
|--|------------|
| <a href="#">Upwelling East of Eden</a> | South-east |

## Biologically Important Areas [\[ Resource Information \]](#)

| Scientific Name | Behaviour | Presence |
|-----------------|-----------|----------|
| Seabirds        |           |          |

| Scientific Name   | Behaviour | Presence        |
|---|-----------|-----------------|
| <a href="#">Ardena tenuirostris</a><br>Short-tailed Shearwater [82652]        | Breeding  | Known to occur  |
| <a href="#">Ardena tenuirostris</a><br>Short-tailed Shearwater [82652]        | Foraging  | Known to occur  |
| <a href="#">Diomedea exulans (sensu lato)</a><br>Wandering Albatross [1073]   | Foraging  | Known to occur  |
| <a href="#">Diomedea exulans antipodensis</a><br>Antipodean Albatross [82269] | Foraging  | Known to occur  |
| <a href="#">Eudyptula minor</a><br>Little Penguin [1085]                      | Breeding  | Known to occur  |
| <a href="#">Eudyptula minor</a><br>Little Penguin [1085]                      | Foraging  | Known to occur  |
| <a href="#">Pelagodroma marina</a><br>White-faced Storm-petrel [1016]         | Breeding  | Known to occur  |
| <a href="#">Pelagodroma marina</a><br>White-faced Storm-petrel [1016]         | Foraging  | Known to occur  |
| <a href="#">Pelecanoides urinatrix</a><br>Common Diving-petrel [1018]         | Breeding  | Known to occur  |
| <a href="#">Pelecanoides urinatrix</a><br>Common Diving-petrel [1018]         | Foraging  | Known to occur  |
| <a href="#">Phalacrocorax fuscescens</a><br>Black-faced Cormorant [59660]     | Breeding  | Known to occur  |
| <a href="#">Phalacrocorax fuscescens</a><br>Black-faced Cormorant [59660]     | Foraging  | Likely to occur |
| <a href="#">Phalacrocorax fuscescens</a><br>Black-faced Cormorant [59660]     | Foraging  | Known to occur  |
| <a href="#">Sterna striata</a><br>White-fronted Tern [799]                    | Breeding  | Known to occur  |

| Scientific Name  | Behaviour       | Presence        |
|--|-----------------|-----------------|
| <a href="#">Sterna striata</a><br>White-fronted Tern [799]                                 | Foraging        | Known to occur  |
| <a href="#">Thalassarche bulleri</a><br>Bullers Albatross [64460]                          | Foraging        | Known to occur  |
| <a href="#">Thalassarche cauta cauta</a><br>Shy Albatross [82345]                          | Foraging likely | Likely to occur |
| <a href="#">Thalassarche chlororhynchos bassi</a><br>Indian Yellow-nosed Albatross [85249] | Foraging        | Known to occur  |
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]                 | Foraging        | Known to occur  |
| <a href="#">Thalassarche melanophris impavida</a><br>Campbell Albatross [82449]            | Foraging        | Known to occur  |

## Sharks

|   |                            |                |
|---|----------------------------|----------------|
| <a href="#">Carcharodon carcharias</a><br>White Shark [64470] | Breeding<br>(nursery area) | Known to occur |
| <a href="#">Carcharodon carcharias</a><br>White Shark [64470] | Foraging                   | Known to occur |

## Whales

|  |          |                      |
|--|----------|----------------------|
| <a href="#">Balaenoptera musculus brevicauda</a><br>Pygmy Blue Whale [81317] | Foraging | Likely to be present |
|--|----------|----------------------|

## Bioregional Assessments

[\[ Resource Information \]](#)

| SubRegion | BioRegion       | Website                    |
|-----------|-----------------|----------------------------|
| Gippsland | Gippsland Basin | <a href="#">BA website</a> |

# Caveat

## 1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

## 2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

## 3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

## 4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

# Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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## Appendix C TGP OA Protected Matters MNES Report



Australian Government

Department of Climate Change, Energy,  
the Environment and Water

# EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 25-Feb-2025

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

# Summary

## Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

|   |      |
|---|------|
| <a href="#">World Heritage Properties:</a>                    | None |
| <a href="#">National Heritage Places:</a>                     | None |
| <a href="#">Wetlands of International Importance (Ramsar)</a> | 1    |
| <a href="#">Great Barrier Reef Marine Park:</a>               | None |
| <a href="#">Commonwealth Marine Area:</a>                     | 2    |
| <a href="#">Listed Threatened Ecological Communities:</a>     | 5    |
| <a href="#">Listed Threatened Species:</a>                    | 94   |
| <a href="#">Listed Migratory Species:</a>                     | 48   |

## Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

|   |      |
|---|------|
| <a href="#">Commonwealth Lands:</a>                                 | None |
| <a href="#">Commonwealth Heritage Places:</a>                       | None |
| <a href="#">Listed Marine Species:</a>                              | 85   |
| <a href="#">Whales and Other Cetaceans:</a>                         | 15   |
| <a href="#">Critical Habitats:</a>                                  | None |
| <a href="#">Commonwealth Reserves Terrestrial:</a>                  | None |
| <a href="#">Australian Marine Parks:</a>                            | 2    |
| <a href="#">Habitat Critical to the Survival of Marine Turtles:</a> | None |

## Extra Information

This part of the report provides information that may also be relevant to the area you have

|   |      |
|---|------|
| <a href="#">State and Territory Reserves:</a>           | 3    |
| <a href="#">Regional Forest Agreements:</a>             | 2    |
| <a href="#">Nationally Important Wetlands:</a>          | None |
| <a href="#">EPBC Act Referrals:</a>                     | 28   |
| <a href="#">Key Ecological Features (Marine):</a>       | None |
| <a href="#">Biologically Important Areas:</a>           | 17   |
| <a href="#">Bioregional Assessments:</a>                | 1    |
| <a href="#">Geological and Bioregional Assessments:</a> | None |

# Details

## Matters of National Environmental Significance

### Wetlands of International Importance (Ramsar Wetlands) [\[ Resource Information \]](#)

Ramsar Site Name

[Gippsland lakes](#)

Proximity

Within Ramsar site

### Commonwealth Marine Area [\[ Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

### Listed Threatened Ecological Communities [\[ Resource Information \]](#)

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name

[Giant Kelp Marine Forests of South East Australia](#)

Threatened Category

Endangered

Presence Text

Community may occur within area

[Natural Damp Grassland of the Victorian Coastal Plains](#)

Critically Endangered

Community may occur within area

[Subtropical and Temperate Coastal Saltmarsh](#)

Vulnerable

Community likely to occur within area

[Tasmanian Forests and Woodlands dominated by black gum or Brookers gum \(Eucalyptus ovata / E. brookeriana\)](#)

Critically Endangered

Community may occur within area

[Tasmanian white gum \(Eucalyptus viminalis\) wet forest](#)

Critically Endangered

Community likely to occur within area

### Listed Threatened Species [\[ Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name

BIRD

Threatened Category

Presence Text

| Scientific Name   | Threatened Category   | Presence Text  |
|---|-----------------------|--|
| <a href="#">Anthochaera phrygia</a><br>Regent Honeyeater [82338]  | Critically Endangered | Species or species habitat likely to occur within area |
| <a href="#">Aquila audax fleayi</a><br>Tasmanian Wedge-tailed Eagle, Wedge-tailed Eagle (Tasmanian) [64435] | Endangered            | Breeding likely to occur within area                   |
| <a href="#">Ardenna grisea</a><br>Sooty Shearwater [82651]  | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Botaurus poiciloptilus</a><br>Australasian Bittern [1001]                                       | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Calidris acuminata</a><br>Sharp-tailed Sandpiper [874]  | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Calidris canutus</a><br>Red Knot, Knot [855]  | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]   | Critically Endangered | Species or species habitat known to occur within area  |
| <a href="#">Callocephalon fimbriatum</a><br>Gang-gang Cockatoo [768]  | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Calyptorhynchus lathami lathami</a><br>South-eastern Glossy Black-Cockatoo [67036]              | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Ceyx azureus diemenensis</a><br>Tasmanian Azure Kingfisher [25977]                              | Endangered            | Species or species habitat may occur within area       |
| <a href="#">Charadrius leschenaultii</a><br>Greater Sand Plover, Large Sand Plover [877]                    | Vulnerable            | Species or species habitat likely to occur within area |

| Scientific Name  | Threatened Category | Presence Text  |
|--|---------------------|--|
| <a href="#">Climacteris picumnus victoriae</a><br>Brown Treecreeper (south-eastern) [67062]  | Vulnerable          | Species or species habitat may occur within area                   |
| <a href="#">Diomedea antipodensis</a><br>Antipodean Albatross [64458]  | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea antipodensis gibsoni</a><br>Gibson's Albatross [82270]  | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea epomophora</a><br>Southern Royal Albatross [89221]  | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea exulans</a><br>Wandering Albatross [89223]  | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea sanfordi</a><br>Northern Royal Albatross [64456]  | Endangered          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Falco hypoleucos</a><br>Grey Falcon [929]  | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Fregetta grallaria grallaria</a><br>White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438] | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Gallinago hardwickii</a><br>Latham's Snipe, Japanese Snipe [863]   | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Grantiella picta</a><br>Painted Honeyeater [470]   | Vulnerable          | Species or species habitat likely to occur within area             |

| Scientific Name   | Threatened Category   | Presence Text  |
|---|-----------------------|--|
| <a href="#">Halobaena caerulea</a><br>Blue Petrel [1059]  | Vulnerable            | Species or species habitat may occur within area                   |
| <a href="#">Hirundapus caudacutus</a><br>White-throated Needletail [682]  | Vulnerable            | Species or species habitat known to occur within area              |
| <a href="#">Lathamus discolor</a><br>Swift Parrot [744]   | Critically Endangered | Species or species habitat likely to occur within area             |
| <a href="#">Limosa lapponica baueri</a><br>Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]     | Endangered            | Species or species habitat likely to occur within area             |
| <a href="#">Macronectes giganteus</a><br>Southern Giant-Petrel, Southern Giant Petrel [1060]                        | Endangered            | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Macronectes halli</a><br>Northern Giant Petrel [1061]   | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Melanodryas cucullata cucullata</a><br>South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093] | Endangered            | Species or species habitat may occur within area                   |
| <a href="#">Neophema chrysogaster</a><br>Orange-bellied Parrot [747]  | Critically Endangered | Species or species habitat may occur within area                   |
| <a href="#">Neophema chrysostoma</a><br>Blue-winged Parrot [726]  | Vulnerable            | Species or species habitat likely to occur within area             |
| <a href="#">Numenius madagascariensis</a><br>Eastern Curlew, Far Eastern Curlew [847]                               | Critically Endangered | Species or species habitat known to occur within area              |
| <a href="#">Pachyptila turtur subantarctica</a><br>Fairy Prion (southern) [64445]                                   | Vulnerable            | Species or species habitat known to occur within area              |

| Scientific Name   | Threatened Category | Presence Text  |
|---|---------------------|--|
| <a href="#">Phoebetria fusca</a><br>Sooty Albatross [1075]  | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Pterodroma leucoptera leucoptera</a><br>Gould's Petrel, Australian Gould's Petrel [26033] | Endangered          | Species or species habitat may occur within area                   |
| <a href="#">Rostratula australis</a><br>Australian Painted Snipe [77037]                              | Endangered          | Species or species habitat likely to occur within area             |
| <a href="#">Stagonopleura guttata</a><br>Diamond Firetail [59398]                                     | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Sternula nereis nereis</a><br>Australian Fairy Tern [82950]                               | Vulnerable          | Species or species habitat known to occur within area              |
| <a href="#">Thalassarche bulleri</a><br>Buller's Albatross, Pacific Albatross [64460]                 | Vulnerable          | Species or species habitat may occur within area                   |
| <a href="#">Thalassarche bulleri platei</a><br>Northern Buller's Albatross, Pacific Albatross [82273] | Vulnerable          | Species or species habitat may occur within area                   |
| <a href="#">Thalassarche carteri</a><br>Indian Yellow-nosed Albatross [64464]                         | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Thalassarche cauta</a><br>Shy Albatross [89224]   | Endangered          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche chrysostoma</a><br>Grey-headed Albatross [66491]                             | Endangered          | Species or species habitat may occur within area                   |
| <a href="#">Thalassarche impavida</a><br>Campbell Albatross, Campbell Black-browed Albatross [64459]  | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |

| Scientific Name  | Threatened Category    | Presence Text  |
|--|------------------------|--|
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]                                 | Vulnerable             | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche salvini</a><br>Salvin's Albatross [64463]   | Vulnerable             | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche steadi</a><br>White-capped Albatross [64462]                                      | Vulnerable             | Foraging, feeding or related behaviour known to occur within area  |
| <a href="#">Thinornis cucullatus cucullatus</a><br>Eastern Hooded Plover, Eastern Hooded Plover [90381]    | Vulnerable             | Species or species habitat likely to occur within area             |
| <a href="#">Tringa nebularia</a><br>Common Greenshank, Greenshank [832]                                    | Endangered             | Species or species habitat known to occur within area              |
| <a href="#">Tyto novaehollandiae castanops (Tasmanian population)</a><br>Masked Owl (Tasmanian) [67051]    | Vulnerable             | Species or species habitat likely to occur within area             |
| <b>CRUSTACEAN</b>  |                        |  |
| <a href="#">Astacopsis gouldi</a><br>Giant Freshwater Crayfish, Tasmanian Giant Freshwater Lobster [64415] | Vulnerable             | Species or species habitat may occur within area                   |
| <b>FISH</b>  |                        |  |
| <a href="#">Galaxiella pusilla</a><br>Eastern Dwarf Galaxias, Dwarf Galaxias [56790]                       | Endangered             | Species or species habitat may occur within area                   |
| <a href="#">Prototroctes maraena</a><br>Australian Grayling [26179]  | Vulnerable             | Species or species habitat likely to occur within area             |
| <a href="#">Seriolella brama</a><br>Blue Warehou [69374]   | Conservation Dependent | Species or species habitat known to occur within area              |

| Scientific Name  | Threatened Category   | Presence Text  |
|--|-----------------------|--|
| <a href="#">Thymichthys politus</a><br>Red Handfish [83756]  | Critically Endangered | Species or species habitat may occur within area                   |
| <b>FROG</b>  |                       |  |
| <a href="#">Litoria aurea</a><br>Green and Golden Bell Frog [1870]   | Vulnerable            | Species or species habitat likely to occur within area             |
| <a href="#">Litoria raniformis</a><br>Southern Bell Frog, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]                        | Vulnerable            | Species or species habitat known to occur within area              |
| <a href="#">Uperoleia martini</a><br>Martin's Toadlet [1873]   | Endangered            | Species or species habitat may occur within area                   |
| <b>MAMMAL</b>  |                       |  |
| <a href="#">Antechinus minimus maritimus</a><br>Swamp Antechinus (mainland) [83086]  | Vulnerable            | Species or species habitat may occur within area                   |
| <a href="#">Balaenoptera borealis</a><br>Sei Whale [34]  | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Balaenoptera musculus</a><br>Blue Whale [36]   | Endangered            | Species or species habitat likely to occur within area             |
| <a href="#">Balaenoptera physalus</a><br>Fin Whale [37]  | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Dasyurus maculatus maculatus (SE mainland population)</a><br>Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184] | Endangered            | Species or species habitat may occur within area                   |
| <a href="#">Dasyurus maculatus maculatus (Tasmanian population)</a><br>Spotted-tail Quoll, Spot-tailed Quoll, Tiger Quoll (Tasmanian population) [75183]               | Vulnerable            | Species or species habitat known to occur within area              |

| Scientific Name   | Threatened Category | Presence Text  |
|---|---------------------|--|
| <a href="#">Dasyurus viverrinus</a><br>Eastern Quoll, Luaner [333]                                      | Endangered          | Species or species habitat may occur within area             |
| <a href="#">Eubalaena australis</a><br>Southern Right Whale [40]  | Endangered          | Species or species habitat known to occur within area        |
| <a href="#">Perameles gunnii gunnii</a><br>Eastern Barred Bandicoot (Tasmania) [66651]                  | Vulnerable          | Species or species habitat likely to occur within area       |
| <a href="#">Pseudomys novaehollandiae</a><br>New Holland Mouse, Pookila [96]                            | Vulnerable          | Species or species habitat likely to occur within area       |
| <a href="#">Pteropus poliocephalus</a><br>Grey-headed Flying-fox [186]                                  | Vulnerable          | Foraging, feeding or related behaviour may occur within area |
| <a href="#">Sarcophilus harrisii</a><br>Tasmanian Devil [299]   | Endangered          | Species or species habitat likely to occur within area       |
| <b>PLANT</b>  |                     |  |
| <a href="#">Amphibromus fluitans</a><br>River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215] | Vulnerable          | Species or species habitat likely to occur within area       |
| <a href="#">Caladenia caudata</a><br>Tailed Spider-orchid [17067]                                       | Vulnerable          | Species or species habitat likely to occur within area       |
| <a href="#">Caladenia tessellata</a><br>Thick-lipped Spider-orchid, Daddy Long-legs [2119]              | Vulnerable          | Species or species habitat likely to occur within area       |
| <a href="#">Commersonia prostrata</a><br>Dwarf Kerrawang [87152]  | Endangered          | Species or species habitat likely to occur within area       |
| <a href="#">Dianella amoena</a><br>Matted Flax-lily [64886]   | Endangered          | Species or species habitat may occur within area             |

| Scientific Name   | Threatened Category | Presence Text  |
|---|---------------------|--|
| <a href="#">Dodonaea procumbens</a><br>Trailing Hop-bush [12149]  | Vulnerable          | Species or species habitat likely to occur within area |
| <a href="#">Glycine latrobeana</a><br>Clover Glycine, Purple Clover [13910]   | Vulnerable          | Species or species habitat likely to occur within area |
| <a href="#">Lepidium hyssopifolium</a><br>Basalt Pepper-cress, Peppergrass, Rubble Pepper-cress, Pepperweed [16542] | Endangered          | Species or species habitat may occur within area       |
| <a href="#">Prasophyllum apoxychilum</a><br>Tapered Leek-orchid [64947]   | Endangered          | Species or species habitat may occur within area       |
| <a href="#">Prasophyllum secutum</a><br>Northern Leek-orchid [64954]  | Endangered          | Species or species habitat likely to occur within area |
| <a href="#">Pterostylis chlorogramma</a><br>Green-striped Greenhood [56510]   | Vulnerable          | Species or species habitat may occur within area       |
| <a href="#">Pterostylis ziegeleri</a><br>Grassland Greenhood, Cape Portland Greenhood [64971]                       | Vulnerable          | Species or species habitat may occur within area       |
| <a href="#">Senecio psilocarpus</a><br>Swamp Fireweed, Smooth-fruited Groundsel [64976]                             | Vulnerable          | Species or species habitat likely to occur within area |
| <a href="#">Thelymitra epipactoides</a><br>Metallic Sun-orchid [11896]  | Endangered          | Species or species habitat likely to occur within area |
| <a href="#">Thesium australe</a><br>Austral Toadflax, Toadflax [15202]  | Vulnerable          | Species or species habitat may occur within area       |
| <a href="#">Xanthorrhoea arenaria</a><br>Sand Grass-tree [21603]  | Vulnerable          | Species or species habitat may occur within area       |

| Scientific Name | Threatened Category | Presence Text |
|-----------------|---------------------|---------------|
|-----------------|---------------------|---------------|

|  |            |   |
|--|------------|---|
| <a href="#">Xanthorrhoea bracteata</a><br>Shiny Grasstree [7950] | Endangered | Species or species habitat known to occur within area |
|--|------------|---|

|  |            |  |
|--|------------|--|
| <a href="#">Xerochrysum palustre</a><br>Swamp Everlasting, Swamp Paper Daisy [76215] | Vulnerable | Species or species habitat likely to occur within area |
|--|------------|--|

| REPTILE |
|---------|
|---------|

|   |            |                                      |
|---|------------|--------------------------------------|
| <a href="#">Caretta caretta</a><br>Loggerhead Turtle [1763] | Endangered | Breeding likely to occur within area |
|---|------------|--------------------------------------|

|   |            |  |
|---|------------|--|
| <a href="#">Chelonia mydas</a><br>Green Turtle [1765] | Vulnerable | Species or species habitat may occur within area |
|---|------------|--|

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|--|------------|---|
| <a href="#">Dermochelys coriacea</a><br>Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Species or species habitat known to occur within area |
|--|------------|---|

|   |            |  |
|---|------------|--|
| <a href="#">Lissolepis coventryi</a><br>Swamp Skink, Eastern Mourning Skink [84053] | Endangered | Species or species habitat may occur within area |
|---|------------|--|

| SHARK |
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|  |            |                                     |
|--|------------|-------------------------------------|
| <a href="#">Carcharodon carcharias</a><br>White Shark, Great White Shark [64470] | Vulnerable | Breeding known to occur within area |
|--|------------|-------------------------------------|

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|--|------------------------|--|
| <a href="#">Galeorhinus galeus</a><br>School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453] | Conservation Dependent | Species or species habitat likely to occur within area |
|--|------------------------|--|

|  |            |  |
|--|------------|--|
| <a href="#">Rhincodon typus</a><br>Whale Shark [66680] | Vulnerable | Species or species habitat may occur within area |
|--|------------|--|

| Listed Migratory Species | [ Resource Information ] |
|--------------------------|--------------------------|
|--------------------------|--------------------------|

| Scientific Name | Threatened Category | Presence Text |
|-----------------|---------------------|---------------|
|-----------------|---------------------|---------------|

| Migratory Marine Birds |
|------------------------|
|------------------------|

|   |  |  |
|---|--|--|
| <a href="#">Apus pacificus</a><br>Fork-tailed Swift [678] |  | Species or species habitat likely to occur within area |
|---|--|--|

| Scientific Name   | Threatened Category | Presence Text  |
|---|---------------------|--|
| <a href="#">Ardena carneipes</a><br>Flesh-footed Shearwater, Fleshy-footed Shearwater [82404] |                     | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Ardena grisea</a><br>Sooty Shearwater [82651]                                     | Vulnerable          | Species or species habitat may occur within area                   |
| <a href="#">Diomedea antipodensis</a><br>Antipodean Albatross [64458]                         | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea epomophora</a><br>Southern Royal Albatross [89221]                       | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea exulans</a><br>Wandering Albatross [89223]                               | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Diomedea sanfordi</a><br>Northern Royal Albatross [64456]                         | Endangered          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Macronectes giganteus</a><br>Southern Giant-Petrel, Southern Giant Petrel [1060]  | Endangered          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Macronectes halli</a><br>Northern Giant Petrel [1061]                             | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Phoebetria fusca</a><br>Sooty Albatross [1075]                                    | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Sternula albifrons</a><br>Little Tern [82849]                                     |                     | Species or species habitat may occur within area                   |

| Scientific Name  | Threatened Category | Presence Text  |
|--|---------------------|--|
| <a href="#">Thalassarche bulleri</a><br>Buller's Albatross, Pacific Albatross [64460]                | Vulnerable          | Species or species habitat may occur within area                   |
| <a href="#">Thalassarche carteri</a><br>Indian Yellow-nosed Albatross [64464]                        | Vulnerable          | Species or species habitat likely to occur within area             |
| <a href="#">Thalassarche cauta</a><br>Shy Albatross [89224]  | Endangered          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche chrysostoma</a><br>Grey-headed Albatross [66491]                            | Endangered          | Species or species habitat may occur within area                   |
| <a href="#">Thalassarche impavida</a><br>Campbell Albatross, Campbell Black-browed Albatross [64459] | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]                           | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche salvini</a><br>Salvin's Albatross [64463]                                   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Thalassarche steadi</a><br>White-capped Albatross [64462]                                | Vulnerable          | Foraging, feeding or related behaviour known to occur within area  |
| <b>Migratory Marine Species</b>  |                     |  |
| <a href="#">Balaenoptera borealis</a><br>Sei Whale [34]  | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Balaenoptera musculus</a><br>Blue Whale [36]   | Endangered          | Species or species habitat likely to occur within area             |

| Scientific Name   | Threatened Category | Presence Text  |
|---|---------------------|--|
| <a href="#">Balaenoptera physalus</a><br>Fin Whale [37]   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Caperea marginata</a><br>Pygmy Right Whale [39]                                     |                     | Foraging, feeding or related behaviour may occur within area       |
| <a href="#">Carcharias taurus</a><br>Grey Nurse Shark [64469]                                   |                     | Species or species habitat may occur within area                   |
| <a href="#">Carcharodon carcharias</a><br>White Shark, Great White Shark [64470]                | Vulnerable          | Breeding known to occur within area                                |
| <a href="#">Caretta caretta</a><br>Loggerhead Turtle [1763]                                     | Endangered          | Breeding likely to occur within area                               |
| <a href="#">Chelonia mydas</a><br>Green Turtle [1765]   | Vulnerable          | Species or species habitat may occur within area                   |
| <a href="#">Dermochelys coriacea</a><br>Leatherback Turtle, Leathery Turtle, Luth [1768]        | Endangered          | Species or species habitat known to occur within area              |
| <a href="#">Eubalaena australis as Balaena glacialis australis</a><br>Southern Right Whale [40] | Endangered          | Species or species habitat known to occur within area              |
| <a href="#">Isurus oxyrinchus</a><br>Shortfin Mako, Mako Shark [79073]                          |                     | Species or species habitat likely to occur within area             |
| <a href="#">Lagenorhynchus obscurus</a><br>Dusky Dolphin [43]                                   |                     | Species or species habitat may occur within area                   |
| <a href="#">Lamna nasus</a><br>Porbeagle, Mackerel Shark [83288]                                |                     | Species or species habitat likely to occur within area             |

| Scientific Name  | Threatened Category   | Presence Text  |
|--|-----------------------|--|
| <a href="#">Megaptera novaeangliae</a><br>Humpback Whale [38]            |                       | Species or species habitat known to occur within area  |
| <a href="#">Orcinus orca</a><br>Killer Whale, Orca [46]                  |                       | Species or species habitat likely to occur within area |
| <a href="#">Rhincodon typus</a><br>Whale Shark [66680]                   | Vulnerable            | Species or species habitat may occur within area       |
| <b>Migratory Terrestrial Species</b>                                     |                       |  |
| <a href="#">Hirundapus caudacutus</a><br>White-throated Needletail [682] | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Motacilla flava</a><br>Yellow Wagtail [644]                  |                       | Species or species habitat may occur within area       |
| <b>Migratory Wetlands Species</b>  |                       |  |
| <a href="#">Actitis hypoleucos</a><br>Common Sandpiper [59309]           |                       | Species or species habitat known to occur within area  |
| <a href="#">Calidris acuminata</a><br>Sharp-tailed Sandpiper [874]       | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Calidris canutus</a><br>Red Knot, Knot [855]                 | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]            | Critically Endangered | Species or species habitat known to occur within area  |
| <a href="#">Calidris melanotos</a><br>Pectoral Sandpiper [858]           |                       | Species or species habitat may occur within area       |
| <a href="#">Calidris ruficollis</a><br>Red-necked Stint [860]            |                       | Species or species habitat known to occur within area  |

| Scientific Name  | Threatened Category   | Presence Text  |
|--|-----------------------|--|
| <a href="#">Charadrius leschenaultii</a><br>Greater Sand Plover, Large Sand Plover [877] | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Gallinago hardwickii</a><br>Latham's Snipe, Japanese Snipe [863]             | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Limosa lapponica</a><br>Bar-tailed Godwit [844]                              |                       | Species or species habitat known to occur within area  |
| <a href="#">Numenius madagascariensis</a><br>Eastern Curlew, Far Eastern Curlew [847]    | Critically Endangered | Species or species habitat known to occur within area  |
| <a href="#">Tringa nebularia</a><br>Common Greenshank, Greenshank [832]                  | Endangered            | Species or species habitat known to occur within area  |

## Other Matters Protected by the EPBC Act

| Listed Marine Species  |                     | [ <a href="#">Resource Information</a> ]                                   |
|--|---------------------|--|
| Scientific Name  | Threatened Category | Presence Text  |
| Bird   |                     |  |
| <a href="#">Actitis hypoleucos</a><br>Common Sandpiper [59309]   |                     | Species or species habitat known to occur within area                      |
| <a href="#">Apus pacificus</a><br>Fork-tailed Swift [678]  |                     | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Ardenna carneipes as Puffinus carneipes</a><br>Flesh-footed Shearwater, Fleshy-footed Shearwater [82404] |                     | Foraging, feeding or related behaviour likely to occur within area         |
| <a href="#">Ardenna grisea as Puffinus griseus</a><br>Sooty Shearwater [82651]                                       | Vulnerable          | Species or species habitat may occur within area                           |

| Scientific Name   | Threatened Category   | Presence Text   |
|---|-----------------------|---|
| <a href="#">Bubulcus ibis as Ardea ibis</a><br>Cattle Egret [66521]                             |                       | Species or species habitat may occur within area overfly marine area      |
| <a href="#">Calidris acuminata</a><br>Sharp-tailed Sandpiper [874]                              | Vulnerable            | Species or species habitat known to occur within area                     |
| <a href="#">Calidris canutus</a><br>Red Knot, Knot [855]  | Vulnerable            | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]                                   | Critically Endangered | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Calidris melanotos</a><br>Pectoral Sandpiper [858]                                  |                       | Species or species habitat may occur within area overfly marine area      |
| <a href="#">Calidris ruficollis</a><br>Red-necked Stint [860]                                   |                       | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Charadrius leschenaultii</a><br>Greater Sand Plover, Large Sand Plover [877]        | Vulnerable            | Species or species habitat likely to occur within area                    |
| <a href="#">Charadrius ruficapillus</a><br>Red-capped Plover [881]                              |                       | Species or species habitat known to occur within area overfly marine area |
| <a href="#">Diomedea antipodensis</a><br>Antipodean Albatross [64458]                           | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area        |
| <a href="#">Diomedea antipodensis gibsoni as Diomedea gibsoni</a><br>Gibson's Albatross [82270] | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area        |

| Scientific Name   | Threatened Category   | Presence Text  |
|---|-----------------------|--|
| <a href="#">Diomedea epomophora</a><br>Southern Royal Albatross [89221]       | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area         |
| <a href="#">Diomedea exulans</a><br>Wandering Albatross [89223]               | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area         |
| <a href="#">Diomedea sanfordi</a><br>Northern Royal Albatross [64456]         | Endangered            | Foraging, feeding or related behaviour likely to occur within area         |
| <a href="#">Gallinago hardwickii</a><br>Latham's Snipe, Japanese Snipe [863]  | Vulnerable            | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Haliaeetus leucogaster</a><br>White-bellied Sea-Eagle [943]       |                       | Species or species habitat known to occur within area                      |
| <a href="#">Halobaena caerulea</a><br>Blue Petrel [1059]                      | Vulnerable            | Species or species habitat may occur within area                           |
| <a href="#">Himantopus himantopus</a><br>Pied Stilt, Black-winged Stilt [870] |                       | Species or species habitat known to occur within area overfly marine area  |
| <a href="#">Hirundapus caudacutus</a><br>White-throated Needletail [682]      | Vulnerable            | Species or species habitat known to occur within area overfly marine area  |
| <a href="#">Lathamus discolor</a><br>Swift Parrot [744]                       | Critically Endangered | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Limosa lapponica</a><br>Bar-tailed Godwit [844]                   |                       | Species or species habitat known to occur within area                      |

| Scientific Name  | Threatened Category   | Presence Text  |
|--|-----------------------|--|
| <a href="#">Macronectes giganteus</a><br>Southern Giant-Petrel, Southern Giant Petrel [1060] | Endangered            | Foraging, feeding or related behaviour likely to occur within area         |
| <a href="#">Macronectes halli</a><br>Northern Giant Petrel [1061]                            | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area         |
| <a href="#">Merops ornatus</a><br>Rainbow Bee-eater [670]                                    |                       | Species or species habitat may occur within area overfly marine area       |
| <a href="#">Motacilla flava</a><br>Yellow Wagtail [644]                                      |                       | Species or species habitat may occur within area overfly marine area       |
| <a href="#">Myiagra cyanoleuca</a><br>Satin Flycatcher [612]                                 |                       | Species or species habitat known to occur within area overfly marine area  |
| <a href="#">Neophema chrysogaster</a><br>Orange-bellied Parrot [747]                         | Critically Endangered | Species or species habitat may occur within area overfly marine area       |
| <a href="#">Neophema chrysostoma</a><br>Blue-winged Parrot [726]                             | Vulnerable            | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Numenius madagascariensis</a><br>Eastern Curlew, Far Eastern Curlew [847]        | Critically Endangered | Species or species habitat known to occur within area                      |
| <a href="#">Pachyptila turtur</a><br>Fairy Prion [1066]                                      |                       | Species or species habitat known to occur within area                      |
| <a href="#">Phoebastria fusca</a><br>Sooty Albatross [1075]                                  | Vulnerable            | Species or species habitat likely to occur within area                     |

| Scientific Name  | Threatened Category | Presence Text  |
|--|---------------------|--|
| <a href="#">Rhipidura rufifrons</a><br>Rufous Fantail [592]  |                     | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Rostratula australis as Rostratula benghalensis (sensu lato)</a><br>Australian Painted Snipe [77037]               | Endangered          | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Stercorarius antarcticus as Catharacta skua</a><br>Brown Skua [85039]  |                     | Species or species habitat may occur within area                           |
| <a href="#">Sterna striata</a><br>White-fronted Tern [799]   |                     | Foraging, feeding or related behaviour likely to occur within area         |
| <a href="#">Sternula albifrons as Sterna albifrons</a><br>Little Tern [82849]  |                     | Species or species habitat may occur within area                           |
| <a href="#">Thalassarche bulleri</a><br>Buller's Albatross, Pacific Albatross [64460]  | Vulnerable          | Species or species habitat may occur within area                           |
| <a href="#">Thalassarche bulleri platei as Thalassarche sp. nov.</a><br>Northern Buller's Albatross, Pacific Albatross [82273] | Vulnerable          | Species or species habitat may occur within area                           |
| <a href="#">Thalassarche carteri</a><br>Indian Yellow-nosed Albatross [64464]  | Vulnerable          | Species or species habitat likely to occur within area                     |
| <a href="#">Thalassarche cauta</a><br>Shy Albatross [89224]  | Endangered          | Foraging, feeding or related behaviour likely to occur within area         |
| <a href="#">Thalassarche chrysostoma</a><br>Grey-headed Albatross [66491]  | Endangered          | Species or species habitat may occur within area                           |

| Scientific Name  | Threatened Category | Presence Text  |
|--|---------------------|--|
| <a href="#">Thalassarche impavida</a><br>Campbell Albatross, Campbell Black-browed Albatross [64459]   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area         |
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area         |
| <a href="#">Thalassarche salvini</a><br>Salvin's Albatross [64463]   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area         |
| <a href="#">Thalassarche steadi</a><br>White-capped Albatross [64462]  | Vulnerable          | Foraging, feeding or related behaviour known to occur within area          |
| <a href="#">Thinornis cucullatus as Thinornis rubricollis</a><br>Hooded Plover, Hooded Dotterel [87735]                                      |                     | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Thinornis cucullatus cucullatus as Thinornis rubricollis rubricollis</a><br>Eastern Hooded Plover, Eastern Hooded Plover [90381] | Vulnerable          | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Tringa nebularia</a><br>Common Greenshank, Greenshank [832]  | Endangered          | Species or species habitat known to occur within area overfly marine area  |
| <b>Fish</b>  |                     |  |
| <a href="#">Heraldia nocturna</a><br>Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]                |                     | Species or species habitat may occur within area                           |
| <a href="#">Hippocampus abdominalis</a><br>Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]              |                     | Species or species habitat may occur within area                           |
| <a href="#">Hippocampus breviceps</a><br>Short-head Seahorse, Short-snouted Seahorse [66235]   |                     | Species or species habitat may occur within area                           |

| Scientific Name   | Threatened Category | Presence Text                                    |
|---|---------------------|--|
| <a href="#">Hippocampus minotaur</a><br>Bullneck Seahorse [66705]   |                     | Species or species habitat may occur within area |
| <a href="#">Histiogamphelus briggsii</a><br>Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]    |                     | Species or species habitat may occur within area |
| <a href="#">Histiogamphelus cristatus</a><br>Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243] |                     | Species or species habitat may occur within area |
| <a href="#">Hypselognathus rostratus</a><br>Knifesnout Pipefish, Knife-snouted Pipefish [66245]                     |                     | Species or species habitat may occur within area |
| <a href="#">Kaupus costatus</a><br>Deepbody Pipefish, Deep-bodied Pipefish [66246]                                  |                     | Species or species habitat may occur within area |
| <a href="#">Kimblaeus bassensis</a><br>Trawl Pipefish, Bass Strait Pipefish [66247]                                 |                     | Species or species habitat may occur within area |
| <a href="#">Leptoichthys fistularius</a><br>Brushtail Pipefish [66248]  |                     | Species or species habitat may occur within area |
| <a href="#">Lissocampus caudalis</a><br>Australian Smooth Pipefish, Smooth Pipefish [66249]                         |                     | Species or species habitat may occur within area |
| <a href="#">Lissocampus runa</a><br>Javelin Pipefish [66251]  |                     | Species or species habitat may occur within area |
| <a href="#">Maroubra perserrata</a><br>Sawtooth Pipefish [66252]  |                     | Species or species habitat may occur within area |
| <a href="#">Mitotichthys semistriatus</a><br>Halfbanded Pipefish [66261]  |                     | Species or species habitat may occur within area |

| Scientific Name   | Threatened Category | Presence Text                                    |
|---|---------------------|--|
| <a href="#">Mitotichthys tuckeri</a><br>Tucker's Pipefish [66262]   |                     | Species or species habitat may occur within area |
| <a href="#">Notiocampus ruber</a><br>Red Pipefish [66265]   |                     | Species or species habitat may occur within area |
| <a href="#">Phycodurus eques</a><br>Leafy Seadragon [66267]   |                     | Species or species habitat may occur within area |
| <a href="#">Phyllopteryx taeniolatus</a><br>Common Seadragon, Weedy Seadragon [66268]                                 |                     | Species or species habitat may occur within area |
| <a href="#">Pugnaso curtirostris</a><br>Pugnose Pipefish, Pug-nosed Pipefish [66269]                                  |                     | Species or species habitat may occur within area |
| <a href="#">Solegnathus robustus</a><br>Robust Pipehorse, Robust Spiny Pipehorse [66274]                              |                     | Species or species habitat may occur within area |
| <a href="#">Solegnathus spinosissimus</a><br>Spiny Pipehorse, Australian Spiny Pipehorse [66275]                      |                     | Species or species habitat may occur within area |
| <a href="#">Stigmatopora argus</a><br>Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]                       |                     | Species or species habitat may occur within area |
| <a href="#">Stigmatopora nigra</a><br>Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]                 |                     | Species or species habitat may occur within area |
| <a href="#">Stipecampus cristatus</a><br>Ringback Pipefish, Ring-backed Pipefish [66278]                              |                     | Species or species habitat may occur within area |
| <a href="#">Syngnathoides biaculeatus</a><br>Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279] |                     | Species or species habitat may occur within area |

| Scientific Name  | Threatened Category | Presence Text                                    |
|--|---------------------|--|
| <a href="#">Urocampus carinirostris</a><br>Hairy Pipefish [66282]  |                     | Species or species habitat may occur within area |
| <a href="#">Vanacampus margaritifer</a><br>Mother-of-pearl Pipefish [66283]  |                     | Species or species habitat may occur within area |
| <a href="#">Vanacampus phillipi</a><br>Port Phillip Pipefish [66284]   |                     | Species or species habitat may occur within area |
| <a href="#">Vanacampus poecilolaemus</a><br>Longsnout Pipefish, Australian Longsnout Pipefish, Long-snouted Pipefish [66285] |                     | Species or species habitat may occur within area |

#### Mammal

|   |  |  |
|---|--|--|
| <a href="#">Arctocephalus forsteri</a><br>Long-nosed Fur-seal, New Zealand Fur-seal [20]      |  | Species or species habitat may occur within area       |
| <a href="#">Arctocephalus pusillus</a><br>Australian Fur-seal, Australo-African Fur-seal [21] |  | Species or species habitat likely to occur within area |

#### Reptile

|  |            |   |
|--|------------|---|
| <a href="#">Caretta caretta</a><br>Loggerhead Turtle [1763]                              | Endangered | Breeding likely to occur within area                  |
| <a href="#">Chelonia mydas</a><br>Green Turtle [1765]                                    | Vulnerable | Species or species habitat may occur within area      |
| <a href="#">Dermochelys coriacea</a><br>Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Species or species habitat known to occur within area |

#### Whales and Other Cetaceans

[ [Resource Information](#) ]

| Current Scientific Name  | Status | Type of Presence                                 |
|--|--------|--|
| <b>Mammal</b>  |        |  |
| <a href="#">Balaenoptera acutorostrata</a><br>Minke Whale [33] |        | Species or species habitat may occur within area |

| Current Scientific Name  | Status     | Type of Presence   |
|--|------------|--|
| <a href="#">Balaenoptera borealis</a><br>Sei Whale [34]                                  | Vulnerable | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Balaenoptera musculus</a><br>Blue Whale [36]                                 | Endangered | Species or species habitat likely to occur within area             |
| <a href="#">Balaenoptera physalus</a><br>Fin Whale [37]                                  | Vulnerable | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Caperea marginata</a><br>Pygmy Right Whale [39]                              |            | Foraging, feeding or related behaviour may occur within area       |
| <a href="#">Delphinus delphis</a><br>Common Dolphin, Short-beaked<br>Common Dolphin [60] |            | Species or species habitat may occur within area                   |
| <a href="#">Eubalaena australis</a><br>Southern Right Whale [40]                         | Endangered | Species or species habitat known to occur within area              |
| <a href="#">Globicephala macrorhynchus</a><br>Short-finned Pilot Whale [62]              |            | Species or species habitat may occur within area                   |
| <a href="#">Grampus griseus</a><br>Risso's Dolphin, Grampus [64]                         |            | Species or species habitat may occur within area                   |
| <a href="#">Lagenorhynchus obscurus</a><br>Dusky Dolphin [43]                            |            | Species or species habitat may occur within area                   |
| <a href="#">Megaptera novaeangliae</a><br>Humpback Whale [38]                            |            | Species or species habitat known to occur within area              |
| <a href="#">Orcinus orca</a><br>Killer Whale, Orca [46]                                  |            | Species or species habitat likely to occur within area             |

| Current Scientific Name  | Status | Type of Presence                                       |
|--|--------|--|
| <a href="#">Pseudorca crassidens</a><br>False Killer Whale [48]  |        | Species or species habitat likely to occur within area |
| <a href="#">Tursiops aduncus</a><br>Indian Ocean Bottlenose Dolphin,<br>Spotted Bottlenose Dolphin [68418] |        | Species or species habitat likely to occur within area |
| <a href="#">Tursiops truncatus s. str.</a><br>Bottlenose Dolphin [68417]                                   |        | Species or species habitat may occur within area       |

### Australian Marine Parks [\[ Resource Information \]](#)

| Park Name | Zone & IUCN Categories       |
|-----------|------------------------------|
| Beagle    | Multiple Use Zone (IUCN VI)  |
| Beagle    | National Park Zone (IUCN II) |

### Extra Information

#### State and Territory Reserves [\[ Resource Information \]](#)

| Protected Area Name          | Reserve Type         | State |
|------------------------------|----------------------|-------|
| Five Mile Bluff              | Conservation Area    | TAS   |
| Gippsland Lakes Coastal Park | Conservation Park    | VIC   |
| Ninety Mile Beach            | Marine National Park | VIC   |

#### Regional Forest Agreements [\[ Resource Information \]](#)

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

| RFA Name                      | State    |
|-------------------------------|----------|
| <a href="#">Gippsland RFA</a> | Victoria |
| <a href="#">Tasmania RFA</a>  | Tasmania |

#### EPBC Act Referrals [\[ Resource Information \]](#)

| Title of referral   | Reference  | Referral Outcome | Assessment Status |
|---|------------|------------------|-------------------|
| <a href="#">Aurora Green Offshore Wind Farm Preliminary Surveys</a> | 2024/09968 |                  | Completed         |
| <a href="#">Bell Bay Wind Farm</a>                                  | 2024/09868 |                  | Assessment        |

| Title of referral  | Reference  | Referral Outcome      | Assessment Status |
|--|------------|-----------------------|-------------------|
| <a href="#">Blue Mackerel North Offshore Wind Farm Marine Surveys</a>  | 2024/09934 |                       | Completed         |
| <a href="#">Blue Marlin Offshore Wind Energy Project</a>   | 2023/09532 |                       | Completed         |
| <a href="#">Gippsland Dawn Offshore Wind Project Geophysical and Geotechnical Investigations</a>             | 2024/10030 |                       | Referral Decision |
| <a href="#">Gippsland Offshore Wind Farm Marine Survey Investigations</a>                                    | 2023/09682 |                       | Completed         |
| <a href="#">Greater Gippsland Offshore Wind Project</a>  | 2022/09379 |                       | Assessment        |
| <a href="#">Greater Gippsland Offshore Wind Project Initial Marine Field Investigations</a>                  | 2022/09374 |                       | Completed         |
| <a href="#">Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East</a>                | 2024/09795 |                       | Completed         |
| <a href="#">Preliminary Site Investigations for Great Eastern Offshore Wind Project</a>                      | 2024/09890 |                       | Referral Decision |
| <a href="#">Seadragon Offshore Wind, Early Marine Surveys</a>  | 2023/09670 |                       | Completed         |
| <a href="#">Seadragon Offshore Wind Farm</a>   | 2022/9163  |                       | Completed         |
| <a href="#">SMAP telecommunications submarine cable installation</a>   | 2024/09989 |                       | Referral Decision |
| <b>Controlled action</b>   |            |                       |                   |
| <a href="#">Low Head Wind Farm, TAS</a>  | 2012/6450  | Controlled Action     | Post-Approval     |
| <a href="#">Tasmania Natural Gas Project - Stage 2</a>   | 2001/211   | Controlled Action     | Post-Approval     |
| <b>Not controlled action</b>   |            |                       |                   |
| <a href="#">Gippsland Basin Seismic Programme</a>  | 2004/1866  | Not Controlled Action | Completed         |
| <a href="#">Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</a> | 2015/7522  | Not Controlled Action | Completed         |
| <a href="#">INDIGO Central Submarine Telecommunications Cable</a>  | 2017/8127  | Not Controlled Action | Completed         |
| <a href="#">Subdivision for Residential development</a>  | 2004/1823  | Not Controlled Action | Completed         |

| Title of referral   | Reference | Referral Outcome                          | Assessment Status |
|---|-----------|---|-------------------|
| <b>Not controlled action</b>  |           |   |                   |
| <a href="#">West Triton Drilling Program - Gippsland Basin</a>                    | 2007/3915 | Not Controlled Action                     | Completed         |
| <b>Not controlled action (particular manner)</b>                                  |           |   |                   |
| <a href="#">2D Seismic Aquisition Survey</a>                                      | 2008/4041 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">2D Seismic Survey</a>   | 2008/4066 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Bream 3D seismic survey</a>   | 2006/2556 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Gippsland 2D Marine Seismic Survey - VIC/P-63, VIC/P-64 and T/46P</a> | 2009/5241 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Golden Beach gas field development</a>                                | 2003/1031 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">INDIGO Marine Cable Route Survey (INDIGO)</a>                         | 2017/7996 | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Northern Fields 3D Seismic Survey</a>                                 | 2001/140  | Not Controlled Action (Particular Manner) | Post-Approval     |
| <a href="#">Southern Flanks 2D Marine Seismic Survey</a>                          | 2010/5288 | Not Controlled Action (Particular Manner) | Post-Approval     |

| Biologically Important Areas                  |  | [ Resource Information ] |                |
|---|--|--------------------------|----------------|
| Scientific Name                               |  | Behaviour                | Presence       |
| <b>Seabirds</b>                               |  |                          |                |
| <a href="#">Ardenna tenuirostris</a>          |  |                          |                |
| Short-tailed Shearwater [82652]               |  | Foraging                 | Known to occur |
| <a href="#">Diomedea exulans (sensu lato)</a> |  |                          |                |
| Wandering Albatross [1073]                    |  | Foraging                 | Known to occur |

| Scientific Name  | Behaviour                     | Presence        |
|--|-------------------------------|-----------------|
| <a href="#">Pelagodroma marina</a><br>White-faced Storm-petrel [1016]                      | Foraging                      | Known to occur  |
| <a href="#">Pelecanoides urinatrix</a><br>Common Diving-petrel [1018]                      | Foraging                      | Known to occur  |
| <a href="#">Phalacrocorax fuscescens</a><br>Black-faced Cormorant [59660]                  | Foraging                      | Known to occur  |
| <a href="#">Thalassarche bulleri</a><br>Bullers Albatross [64460]                          | Foraging                      | Known to occur  |
| <a href="#">Thalassarche cauta cauta</a><br>Shy Albatross [82345]                          | Foraging likely               | Likely to occur |
| <a href="#">Thalassarche chlororhynchos bassi</a><br>Indian Yellow-nosed Albatross [85249] | Foraging                      | Known to occur  |
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]                 | Foraging                      | Known to occur  |
| <a href="#">Thalassarche melanophris impavida</a><br>Campbell Albatross [82449]            | Foraging                      | Known to occur  |
| <b>Sharks</b>  |                               |                 |
| <a href="#">Carcharodon carcharias</a><br>White Shark [64470]                              | Breeding<br>(nursery area)    | Known to occur  |
| <a href="#">Carcharodon carcharias</a><br>White Shark [64470]                              | Distribution                  | Known to occur  |
| <a href="#">Carcharodon carcharias</a><br>White Shark [64470]                              | Distribution<br>(low density) | Likely to occur |
| <a href="#">Carcharodon carcharias</a><br>White Shark [64470]                              | Foraging                      | Known to occur  |
| <a href="#">Carcharodon carcharias</a><br>White Shark [64470]                              | Known<br>distribution         | Known to occur  |
| <b>Whales</b>  |                               |                 |
| <a href="#">Balaenoptera musculus brevicauda</a><br>Pygmy Blue Whale [81317]               | Distribution                  | Known to occur  |

| Scientific Name  | Behaviour | Presence             |
|--|-----------|----------------------|
| <a href="#">Balaenoptera musculus brevicauda</a><br>Pygmy Blue Whale [81317] | Foraging  | Likely to be present |

**Bioregional Assessments** [\[ Resource Information \]](#)

| SubRegion | BioRegion       | Website                    |
|-----------|-----------------|----------------------------|
| Gippsland | Gippsland Basin | <a href="#">BA website</a> |

# Caveat

## 1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

## 2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

## 3 DATA SOURCES

### Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

### Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

## 4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

# Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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## Appendix D TGPPL Consultation Information Package

# TASMANIAN GAS PIPELINE CONSULTATION

## FACT SHEET

Tasmanian Gas Pipeline Pty Ltd (TGPPL) is the operator of the Tasmanian Gas Pipeline (TGP) and is required to have an Environment Plan that covers all their offshore petroleum activities. The current offshore operations Environment Plan for the TGP is being revised in accordance with Commonwealth and State legislation (see box below) that require a formal revision every 5 years, last revised in 2019.

| Commonwealth waters   | Victorian Waters   | Tasmanian Waters  |
|---|--|---|
| <b>Pipeline Licence</b>   |  |   |
| T/PL1-COMM<br>VIC/PL30  | VIC/PL30(V)  | T/PL1-TAS   |
| <b>Regulator</b>  |  |   |
| NOPSEMA   | Department of Energy, Environment and Climate Action – Resources Victoria, Regulatory Operations | Department of State Growth – Marine Resources Tasmania                        |
| <b>Act &amp; Regulations</b>  |  |   |
| Offshore Petroleum and Greenhouse Gas Storage Act & (Environment) Regulations | Offshore Petroleum and Greenhouse Gas Storage Act & Regulations                                  | Petroleum (Submerged Lands) Act & (Management of the Environment) Regulations |

All potential impacts and risks and associated prevention and mitigation control measures are being reviewed. A list of the environmental aspects of the activities relating to TGP operations is provided on the table on the next page. All impacts and risks have been assessed to be low. TGPPL identifies and manages all impacts and risks to an acceptable level and reduces them to As Low As Reasonably Practicable (ALARP). These is reviewed on a bi-annual basis or as needed.

Commissioned in 2002, the TGP is the only pipeline supplying natural gas to Tasmania. The pipeline extends from Longford in Victoria, across Bass Strait to Bell Bay in north-east Tasmania. The offshore section of the TGP is approximately 300 km in length with a maximum water depth along the route of 77 m. The seabed route is mostly flat and featureless and much of the pipeline is partially or fully buried. The pipeline traverses the Beagle Commonwealth Marine Reserve (refer to map on subsequent pages).

The steel pipeline is protected externally by an anti-corrosion coating and a concrete weight coating which also serves to stabilise the pipe and act as a barrier to third party impacts. Australian Maritime Safety Authority (AMSA) has applied a safety zone over the submerged section of the pipeline which prohibits anchoring within 500 m.

There are no permanent offshore facilities (e.g. platforms or mooring buoys) or equipment or machinery associated with the TGP.

There are no daily activities on the pipeline itself apart from continuous monitoring of pipeline flows and pressures by the Control Room in Melbourne. The monitoring system ensures that all relevant alarms and protective systems are in place so that pipeline integrity, and safety of personnel and the public, is not compromised and that security of supply is maintained. Remote shutdown, opening and closing of (onshore) pipeline valves and other ancillary functions are all conducted from the Control Room.

Surveys of the pipeline, to assess pipeline integrity and any maintenance requirements, are undertaken on a periodic basis and occur approximately every 2 to 5 years. These activities include:

- Periodic seabed surveys using remotely operated vehicles (ROVs), Side Scan Sonar (SSS) and Diver Inspections to detect existing or potential pipeline damage;
- Intelligent pigging to detect metal loss in the pipeline wall; and
- Maintenance activities conducted on an as-needs basis following surveys or identified issues, for example utility pigging, installation of grout bags or concrete mattresses and removal of objects dropped from passing ships.

Inspection and maintenance activities are undertaken with support from contracted vessels which operate to the latest international safety and environmental standards. Vessels are generally at sea for 1 to 4 weeks. No vessel refuelling is conducted at sea.

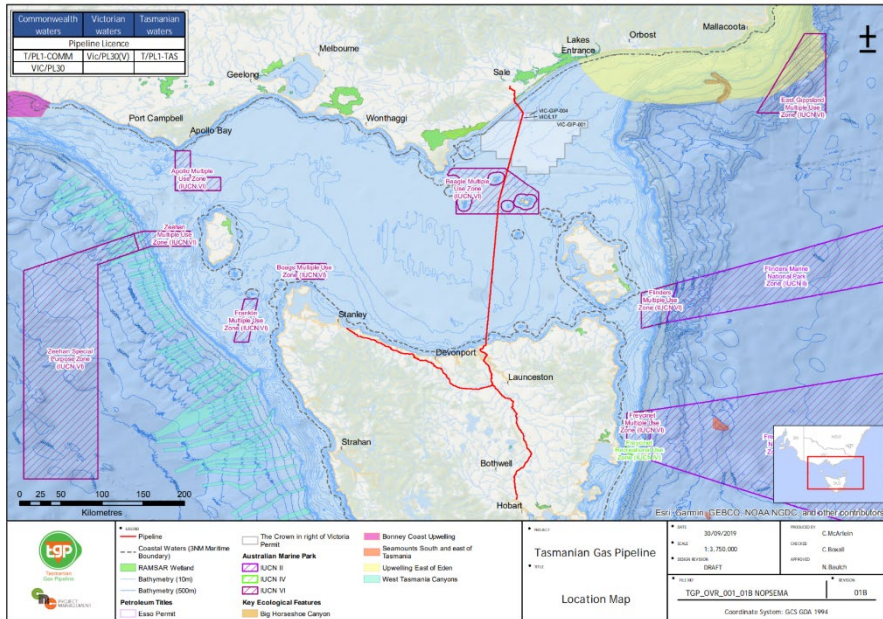
The Director of National Parks has confirmed that the pipeline licences (see box left) issued immediately before the Beagle Commonwealth Marine Reserve commenced are seabed usage rights under the EPBC Act and a permit is not required to undertake inspection and maintenance on the pipeline. In the Environment Plan TGPPL has considered the Beagle management plan objectives and values to ensure that its activities will not be inconsistent with the management plan.

TGPPL commits to keeping relevant stakeholders informed regarding the ongoing operations and is happy to engage in ongoing consultation. If you have any specific questions, request for additional information or feedback about any of these activities, please contact TGPPL at:

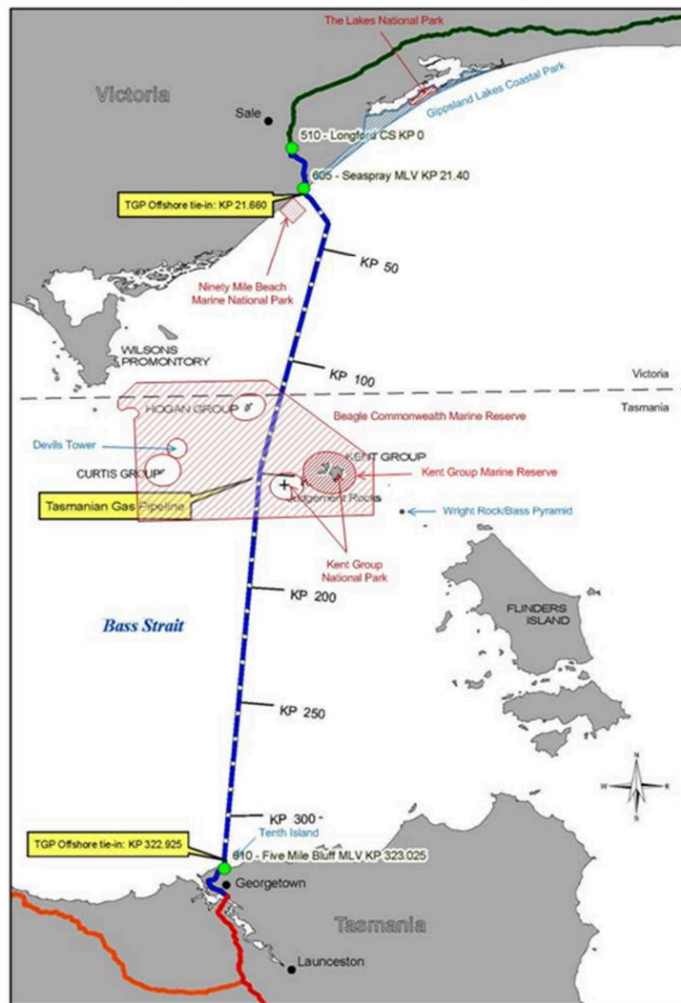
[enquiries@tasmaniangaspipeline.com.au](mailto:enquiries@tasmaniangaspipeline.com.au)

Or call 1300 241 820

*For any information you provide in your feedback, you may request that it not be published publicly. This information will be handled in accordance with the NOPSEMA guidelines by TGPPL to maintain your confidentiality and will not be published within the publicly available Environmental Plan documentation.*



### Location of Tasmanian Gas Pipeline



- Legend**
- Tasmanian Gas Pipeline (Offshore)
  - Tasmanian Gas Pipeline
  - Eastern Gas Pipeline
  - Northern Pipeline Extension
  - Southern Pipeline Extension

## Potential Impacts, Risks and Control Measures

Provided in the table below are the key impacts / risks relating to the operation of the TGP to assist stakeholders in making an informed assessment on possible impacts to their activities, functions or interests in the area.

| Aspect of Activities   | Potential Consequence   | Impact/Risk Reduction & Mitigation Measures  |
|--|---|--|
| Physical interaction with other marine users   | Disruption to other marine users such as commercial fishing and shipping  | <ul style="list-style-type: none"> <li>Existing AMSA safety zone shown on navigational charts</li> <li>Communicate commencement of vessel-based inspection and maintenance activity to relevant stakeholders via Notice to Mariners and via AMSA JRCC</li> <li>No vessel activity of long-term duration at any one location</li> </ul>   |
| Seabed disturbance   | Localised disturbance / damage to benthic habitats and communities  | <ul style="list-style-type: none"> <li>No anchoring except in an emergency</li> <li>Vessel cargo securing manual</li> <li>Vessel crane handling and transfer procedures, maintenance of vessel lifting equipment</li> <li>Vessel GIS contains locations of cultural heritage sites in vicinity of pipeline</li> <li>Small area of benthic habitat disturbance, rapidly filled / recolonised</li> </ul>                             |
|  | Disturbance / damage to cultural heritage sites   |  |
| Vessel planned discharges to the sea - Sewage and food waste - Treated bilge and deck wash     | Temporary and localised reduction in water quality  | <ul style="list-style-type: none"> <li>Routine discharges and vessel waste treatment systems will meet MARPOL requirements</li> <li>No discharge of oily water exceeding 15 ppm oil in water content</li> <li>Food-scrap macerated prior to discharge</li> <li>Planned chemical discharges assessed and approved prior to use</li> </ul>   |
| Vessel noise   | Localised sound emissions   | <ul style="list-style-type: none"> <li>Maintain caution and 'no approach' zones from cetaceans / seal colonies</li> <li>Soft start procedures for SSS surveys, if required.</li> </ul>   |
|  | Temporary disturbance / displacement of sound sensitive fauna   |  |
| Unplanned vessel interaction with marine fauna (vessel strike)                                 | Injury / death of marine megafauna  | <ul style="list-style-type: none"> <li>Vessels only travel at slow speeds along pipeline route</li> <li>Maintain caution and 'no approach' zones from cetaceans / seal colonies</li> </ul>   |
| Unplanned introduction of invasive marine species (IMS) from vessel ballast water / biofouling | Displacement of native species and habitat domination   | <ul style="list-style-type: none"> <li>Ballast Water Management Plan and Certificate, Ballast Water Record System</li> <li>Vessel clearance obtained to enter Australian territory through DAWR prearrival reporting system (MARS)</li> <li>Adherence to Australian Ballast Water Management Requirements</li> <li>Biofouling Risk Assessment shows low risk of IMS introduction</li> <li>Immersible equipment cleaning</li> </ul> |
| Accidental release of hazardous substances and waste from vessel                               | Temporary and localised change in water quality   | <ul style="list-style-type: none"> <li>Vessel compliant with MARPOL waste management requirements</li> <li>Store hazardous liquids in designated areas with spill protection in place</li> <li>Vessels comply with approved SMPEP, including maintaining spill kits, emergency response procedures and conducting spill response exercises</li> </ul>  |
|  | Injury / death of marine fauna  |  |
| Accidental release of diesel fuel from vessel collision  | Injury / death of marine fauna  | <ul style="list-style-type: none"> <li>Communicate commencement of vessel-based inspection and maintenance activity to relevant stakeholders via Notice to Mariners and via AMSA JRCC</li> <li>Vessel crew and navigational equipment will meet legal requirements</li> <li>Vessels comply with approved SMPEP (as above)</li> <li>Implementation of onboard vessel SOPEP</li> </ul>   |
|  | Reduction in water quality  |  |
|  | Pollution of shorelines such as sandy beaches   |  |
|  | Disruption to other marine users  |  |
| Unplanned loss of containment from pipeline  | Temporary and localised change in water quality<br>Disturbance, injury or death of marine fauna and benthic communities | <ul style="list-style-type: none"> <li>Navigational charts detailing location of pipeline</li> <li>NOPSEMA accepted pipeline safety case</li> <li>Pipeline corrosion, inspection and maintenance programs in place</li> </ul>  |

## Appendix E TGPPL Consultation Notes



Tasmanian  
Gas Pipeline

# Relevant Persons Consultation Notes

## Preparation Record

| Rev | Description  | Originator | Reviewed | Approved | Date             |
|-----|--|------------|----------|----------|------------------|
| 2   | Updated to correct Resources Victoria, Regulatory Operations name<br>Additional consultation of local community and emergency services | Nuffield   | W Lipski | W Lipski | 27 November 2025 |
| 1   | Issued   | Nuffield   | W Lipski | W Lipski | 13 March 2025    |
| 0   | Issued   | Nuffield   | W Lipski | W Lipski | 1 December 2024  |

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| Reference #                       | Relevant Person(s)                               | Reasoning for Relevance   | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary   | Assessment Required   | Ongoing Consultation   |
|-----------------------------------|--|---|---|-----------------------|---|---|--|
| Commonwealth Department or Agency |  |   |   |                       |   |   |  |
| RP#005                            | Australian Fisheries Management Authority (AFMA) | Identified as a Commonwealth Department or Agency with NOPSEMA Guideline N-04750-GL1887 A705589. Review of the relevant agency under Environment Regulations section highlighted that either the planned or unplanned activities outlined in the EP met the criteria for relevance. | Email with information package sent 2/9/2024 (Appendix D)   | 2                     | Suggested additional relevant persons through AFMA consultation website. No problems or additional comments raised. | N/A,<br><br><b>Action:</b> Review list of contacts from AFMA website and confirm contacted relevant. ( <u>Completed</u> , already engaged relevant stakeholders from list). | Maintain in database and continue consultation.  |
| RP#076                            | Australian Hydrographic Office (AHO)             | Function as department or agency of the Commonwealth as office responsible for publication of nautical charts and other information for safety of ships navigating in Australian waters (including Notices to Mariners).  | Email with information package sent 13/10/2025 (Appendix D) | 2                     | AHO have requested that future consultation be limited to activities that affect current charted detail.            | N/A   | Maintain database.<br><br>Continue consultation when activities impact current charted detail. |

| Reference # | Relevant Person(s)                                       | Reasoning for Relevance   | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary   | Assessment Required   | Ongoing Consultation   |
|-------------|--|---|---|-----------------------|---|---|--|
| RP#004      | Australian Maritime Safety Authority (AMSA)              | Identified as a Commonwealth Department or Agency with NOPSEMA Guideline N-04750-GL1887 A705589. Review of the relevant agency under Environment Regulations section highlighted that either the planned or unplanned activities outlined in the EP met the criteria for relevance. | Email with information package sent 2/9/2024 (Appendix D) | 5                     | A map visually representing the offshore vessel traffic around the TGP Operations was provided for reference. An update to contact details given. Ongoing consultation with respect to activities being conducted was advised and vessel collision risk raised as main area of concern, referencing the COLREGs and requirements to mitigate risks. | N/A as vessel collision addressed already with the same reference to COLREGs.<br><br><b>Action 1:</b> Update contact information as provided ( <u>Completed</u> ),<br><br><b>Action 2:</b> Ongoing consultation recorded in EP ( <u>Completed</u> ) | Maintain in database and continue consultation. Working vessels and support vessels notify AMSA's Response Centre (ARC) through rccaus@amsa.gov.au (Phone: 1800 641 792 or +61 2 6230 6811) for promulgation of radio-navigation warnings 24-48 hours before operations commence. Australian Hydrographic Office (AHO) contacted through datacentre@hydro.gov.au no less than four working weeks before operations commence for the promulgation of related notices to mariners. |
| RP#001      | Department of Agriculture, Fisheries and Forestry (DAFF) | Identified as a Commonwealth Department or Agency with NOPSEMA Guideline N-04750-GL1887 A705589. Review of the relevant agency under Environment Regulations section highlighted that either the planned or unplanned activities outlined in the EP                                 | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.  | N/A   | Maintain in database and continue consultation.  |

| Reference # | Relevant Person(s)   | Reasoning for Relevance   | First Contacted  | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|--|---|--|-----------------------|-------------------------------------|---------------------|---|
|             |  | met the criteria for relevance.   |  |                       |                                     |                     |   |
| RP#002      | Department of Agriculture, Fisheries and Forestry – Biosecurity (marine pests) | Identified as a Commonwealth Department or Agency with NOPSEMA Guideline N-04750-GL1887 A705589. Review of the relevant agency under Environment Regulations section highlighted that either the planned or unplanned activities outlined in the EP met the criteria for relevance. | Email with information package sent 2/9/2024 (Appendix D)                                      | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#007      | Department of Climate Change, Energy, the Environment and Water (DCCEEW)       | Identified as a Commonwealth Department or Agency with NOPSEMA Guideline N-04750-GL1887 A705589. Review of the relevant agency under Environment Regulations section highlighted that either the planned or unplanned activities outlined in the EP met the criteria for relevance. | Contacted on 16/08/2024 via General Enquiries phone number to obtain best contact information. | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s)  | Reasoning for Relevance   | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary   | Assessment Required   | Ongoing Consultation  |
|-------------|---|---|---|-----------------------|---|---|---|
| RP#006      | Department of Defence (DoD)   | Identified as a Commonwealth Department or Agency with NOPSEMA Guideline N-04750-GL1887 A705589. Review of the relevant agency under Environment Regulations section highlighted that either the planned or unplanned activities outlined in the EP met the criteria for relevance. | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.  | N/A   | Maintain in database and continue consultation.   |
| RP#003      | Department of the Environment and Energy - Director of National Parks | Identified as a Commonwealth Department or Agency with NOPSEMA Guideline N-04750-GL1887 A705589. Review of the relevant agency under Environment Regulations section highlighted that either the planned or unplanned activities outlined in the EP met the criteria for relevance. | Email with information package sent 2/9/2024 (Appendix D) | 3                     | Informed of changes to the SE Commonwealth Marine Reserve Management Plan upcoming. Advised on EP identifying marine park values, impacts and risks and addressing these (including ecosystem values). Referenced NOPSEMA Guidance Note (GN1785) with Marine Parks Australia to be followed. Updated information on emergency | N/A<br><b>Action 1:</b> Reviewed the information within the EP against the Guidance Note to ensure compliance. (Complete)<br><b>Action 2:</b> Added the DNP contact information to the OPEP if the situation arises where the spill occurs within or is likely to impact the National Park (Beagle Marine Park). (Complete) | Maintain in database and continue consultation. Consult when activities occur in Marine Park or as advised in Oil Spill Response. |

| Reference # | Relevant Person(s) | Reasoning for Relevance | First Contacted | Number of Engagements | Relevant Person(s) Feedback Summary  | Assessment Required | Ongoing Consultation |
|-------------|--------------------|-------------------------|-----------------|-----------------------|--|---------------------|----------------------|
|             |                    |                         |                 |                       | response request for DNP to be contacted where spill occurs within or threatens a Marine Park. |                     |                      |

| Reference #                                   | Relevant Person(s)   | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary   | Assessment Required  | Ongoing Consultation   |
|---|--|--|---|-----------------------|---|--|--|
| State / Local Department or Agency - Victoria |  |  |   |                       |   |  |  |
| RP#026  | Department of Energy, Environment and Climate Action (DEECA) - Resources Victoria, Regulatory Operations (Reg Ops) (Petroleum email) | Department of responsible State Minister for Victoria. Required relevant person as per EPBC Act. | Email with information package sent 2/9/2024 (Appendix D)   | 7                     | Reg Ops have advised that the EP is to be submitted to Resources Victoria, Regulatory Operations for assessment. EP will be submitted to Reg Ops when submitted to NOPSEMA. | N/A  | Maintain in database and continue consultation.  |
| RP#077  | Department of Energy, Environment and Climate Action (Agriculture)   | Function as department that administers legislation related to agriculture and biosecurity.      | Email with information package sent 13/10/2025 (Appendix D) | 4                     | Wish to be consulted.   | TGP contacted Agriculture Victoria to identify what additional information they would like to received. No response was provided.<br><br><b>Action:</b> TGP will advise Agriculture Victoria of any suspected invasive marine species identified (refer to CM57) | Maintain in database and continue consultation.<br><br>Advise if any suspected invasive marine species identified. |

| Reference # | Relevant Person(s)  | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary   | Assessment Required  | Ongoing Consultation   |
|-------------|---|--|---|-----------------------|---|--|--|
| RP#011      | Department of Energy, Environment and Climate Action - Planning | State department relevant to the environment, regulation and Victorian State interests for land and sea areas in which TGP operates and conducts activities. | Email with information package sent 2/9/2024 (Appendix D)   | 4                     | Remove the delwp.vic.gov.au email from your list, as that's a now redundant email address and department. Contact is Earth Resources Regulator through DEECA. | N/A,<br><b>Action:</b> Remove DELWP email contact information and replace with up-to-date ( <u>Complete</u> , removed DELWP contact, appropriate email and department already identified and contacted as part of consultation - no response received) | Remove from consultation list as redundant contact information. RP#026 was given as contact. |
| RP#078      | Department of Jobs, Skills, Industry and Regions (DJSIR)        | Function as department or agency of Victoria for economic recovery and business and industry engagement  | Email with information package sent 13/10/2025 (Appendix D) | 2                     | DJSIR have advised that Resources Victoria are better placed to consult on EP. ( <u>Complete</u> , refer to RP#026)   | N/A  | Remove from database   |

| Reference # | Relevant Person(s)                          | Reasoning for Relevance  | First Contacted  | Number of Engagements | Relevant Person(s) Feedback Summary  | Assessment Required   | Ongoing Consultation   |
|-------------|---|--|--|-----------------------|--|---|--|
| RP#012      | Department of Transport (DOT) (Victoria)    | State department relevant to the environment, regulation and Victorian State interests for land and sea areas in which TGP operates and conducts activities. | Email with information package sent 2/9/2024 (Appendix D)  | 2                     | Undeliverable - no response.   | N/A   | Remove from consultation list as redundant contact information. RP#014 replaced. |
| RP#013      | Environment Protection Authority (Victoria) | State department relevant to the environment, regulation and Victorian State interests for land and sea areas in which TGP operates and conducts activities. | Email with information package sent 2/9/2024 (Appendix D)  | 3                     | As it is just an update to a plan and there are no new works proposed, did not wish to review. | N/A   | Maintain in database and continue consultation.                                  |
| RP#079      | Emergency Management Victoria               | Function as Victorian State government agency/authority leading emergency management for Victoria.   | Email with information package sent 13/10/2025 (Appendix D)  | 2                     | Emergency Management Victoria have advised that DEECA are better placed to consult             | N/A   | Remove from database   |
| RP#048      | Gippsland Ports                             | Port within the Victorian State Waters near TGP operations.  | Contacted on 20/08/2024 via General Enquiry on Website. Description of TGP EP work and request for relevant person(s) contact information. | 6                     | Contact provided for within organisation.  | <b>Action:</b> contacted relevant person within organisation. | Maintain in database and continue consultation.                                  |

| Reference # | Relevant Person(s)     | Reasoning for Relevance   | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|------------------------|---|---|-----------------------|-------------------------------------|---------------------|---|
| RP#080      | Gippsland Water Police | Function as the law enforcement agency of Victoria for State waters surrounding Gippsland.  | Email with information package sent 13/10/2025 (Appendix D) | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#017      | Heritage Victoria      | State department relevant to the management and reporting of heritage sites in Victoria and state waters.   | Email with information package sent 2/9/2024 (Appendix D)   | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#015      | Parks Victoria         | State department relevant to the environment, regulation and Victorian State interests for land and sea areas in which TGP operates and conducts activities. Manages State Parks and environmental, ecological and other concerns relevant to environment management. | Email with information package sent 2/9/2024 (Appendix D)   | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#016      | Ports Victoria         | Operating within Victorian State waters and engaged when operating vessels within Victorian State Waters and Ports.   | Email with information package sent 2/9/2024 (Appendix D)   | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s)   | Reasoning for Relevance  | First Contacted  | Number of Engagements | Relevant Person(s) Feedback Summary               | Assessment Required   | Ongoing Consultation   |
|-------------|--|--|--|-----------------------|---|---|--|
| RP#014      | Safe Transport Victoria – On the Water                               | State department relevant to the environment, regulation and Victorian State interests for land and sea areas in which TGP operates and conducts activities. | Email with information package sent 2/9/2024 (Appendix D)  | 2                     | No response given.                                | N/A   | Maintain in database and continue consultation.  |
| RP#009      | Victorian Fisheries Authority  | Operating regulator for Victorian State waters Fisheries area within TGP OA and EMBA.  | Contacted on 30/08/2024 via General Enquiries. Case CCC-1112432-D0B1H1-Tasmanian Gas Pipeline project. | 4                     | Suggested additional relevant persons within VFA. | N/A,<br><b>Action:</b> Contact additional relevant persons identified ( <u>Completed</u> , response received from SIV contact, no response from VRFish) | Maintain in database and continue consultation. RP#010 has been incorporated into RP#009 |
| RP#081      | Victorian State Emergency Service - Eastern Region Bairnsdale Office | Activity as department or agency of the state for flood, storm, tsunami, earthquake, and landslide for eastern region of Victoria                            | Email with information package sent 13/10/2025 (Appendix D)  | 2                     | No response given.                                | N/A   | Maintain in database and continue consultation.  |
| RP#028      | Wellington Shire Council (Victoria)                                  | Local council within EMBA and Operational area of Victorian State waters.  | Email with information package sent 2/9/2024 (Appendix D)  | 2                     | No response given.                                | N/A   | Maintain in database and continue consultation.  |

| Reference #  | Relevant Person(s)   | Reasoning for Relevance   | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary  | Assessment Required  | Ongoing Consultation                            |
|--|--|---|---|-----------------------|--|--|---|
| <b>State / Local Department or Agency - Tasmania</b> |  |   |   |                       |  |  |   |
| RP#027   | Department of State Growth – Mineral Resources Tasmania (MRT)                                      | Department of responsible State Minister for Tasmania. Required relevant person as per EPBC Act.  | Email with information package sent 2/9/2024 (Appendix D) | 4                     | MRT have advised that the final EP is to be submitted to Mineral Resources Tasmania.<br><br><b>Action:</b> Continue to submit monthly environmental reports. Refer to Table 8-3. | N/A  | Maintain in database and continue consultation. |
| RP#020   | Department of Natural Resources and Environment Tasmania - Biosecurity Tasmania                    | State department relevant to the environment, regulation, and Tasmanian State biosecurity interest in State waters in which TGP operates and conducts activities. | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.   | N/A  | Maintain in database and continue consultation. |
| RP#018   | Department of Natural Resources and Environment Tasmania - Environment, Heritage and Land Division | State department relevant to the management and reporting of environment, land and heritage sites in Tasmania and its state waters.                               | Email with information package sent 2/9/2024 (Appendix D) | 5                     | No issues or points of feedback have arose.  | N/A,<br><br><b>Action:</b> Change primary contact email for stakeholder (complete) | Maintain in database and continue consultation. |
| RP#022   | Department of Natural Resources and Environment Tasmania - Marine Aquaculture                      | State department relevant to the environment, regulation, and Tasmanian State interests Marine Aquaculture in State waters in which TGP                           | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.   | N/A  | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s)  | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|---|--|---|-----------------------|-------------------------------------|---------------------|---|
|             |   | operates and conducts activities.  |   |                       |                                     |                     |   |
| RP#021      | Department of Natural Resources and Environment<br>Tasmania - Marine Resources          | State department relevant to the environment, regulation, and Tasmanian State interests in Marine resources in State waters in which TGP operates and conducts activities.   | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#019      | Department of Natural Resources and Environment<br>Tasmania - Parks & Wildlife Services | State department relevant to the environment, regulation and Tasmanian State interests for land and sea areas in which TGP operates and conducts activities. Manages State Parks and environmental, ecological, and other concerns relevant to environment management. | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s)   | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|--|--|---|-----------------------|-------------------------------------|---------------------|---|
| RP#075      | Department of State Growth (Tourism & Hospitality Support) | As the Tasmanian Government department for tourism, the department is positioned well to provide feedback and advice on the impacts of the TGP in Victoria and invaluable resource for insight into potential impacts of the TGP in the OA and EMBA and as a key industry contact (RTO's). | Email with information package sent 15/11/2024 (Appendix D) | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#023      | Environment Protection Authority (Tasmania)                | State department relevant to the environment, regulation and Tasmanian State interests for land and sea areas in which TGP operates and conducts activities.   | Email with information package sent 2/9/2024 (Appendix D)   | 3                     | No comment on EP renewal.           | N/A                 | Maintain in database and continue consultation. |
| RP#029      | George Town Council (Tasmania)                             | Local council within EMBA and Operational area of Tasmanian State waters.  | Email with information package sent 2/9/2024 (Appendix D)   | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#024      | Marine and Safety Tasmania                                 | State department relevant to the safety, regulation on State Waters with interests in areas in which TGP operates and conducts activities.   | Email with information package sent 2/9/2024 (Appendix D)   | 3                     | No comments or feedback.            | N/A                 | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s) | Reasoning for Relevance   | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|--------------------|---|---|-----------------------|-------------------------------------|---------------------|---|
| RP#025      | TasPorts           | Operating within Tasmanian State waters and engaged when TGPPL operating vessels within State Waters and Ports. | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |

| Reference #                           | Relevant Person(s)        | Reasoning for Relevance   | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|---------------------------------------|---------------------------|---|---|-----------------------|-------------------------------------|---------------------|---|
| Non-Government Agency - First Nations |                           |   |   |                       |                                     |                     |   |
| Victoria                              |                           |   |   |                       |                                     |                     |   |
| RP#054                                | Gunai-Kurnai Land Council | This RAP is recognised by the Federal Court and the State of Victoria as the Traditional Owners of a large area of Gippsland spanning from Warragul in the west to the Snowy River in the east, and from the Great Divide in the north to the coast in the south, approx. 10% of the state. The council represents the Traditional Owners of our Country, as determined by the Victorian Aboriginal Heritage Council under the Aboriginal Heritage Act, 2006. This area is within the OA and/or EMBA of TGP Operations. | Email with information package sent 2/9/2024 (Appendix D) | 3                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s)                                     | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|--|--|---|-----------------------|-------------------------------------|---------------------|---|
| Tasmania    |  |  |   |                       |                                     |                     |   |
| RP#056      | Aboriginal Land Council of Tasmania                    | The statutory body established under Tasmanian law to own and manage land on behalf of Tasmania's Aboriginal Community. Considered a group that may represent indigenous groups located within the OA and/or EMBA of TGP Operations. | Email with information package sent 2/9/2024 (Appendix D) | 3                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#058      | Cape Barren Island Aboriginal Association Inc. (CBIAA) | Island in the North West of Tasmania, not directly within the scope of the OA of the pipeline, however due to proximity to the EMBA, considered there may be cultural significant for the land, sea or sky in the area.              | Email with information package sent 2/9/2024 (Appendix D) | 4                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#059      | Flinders Island Aboriginal Association Inc. (FIAAI)    | Island in the North West of Tasmania, not directly within the scope of the OA of the pipeline, however due to proximity to the EMBA, considered there may be cultural significant for the land, sea or sky in the area.              | Email with information package sent 2/9/2024 (Appendix D) | 4                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s)  | Reasoning for Relevance   | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary        | Assessment Required | Ongoing Consultation  |
|-------------|---|---|---|-----------------------|--|---------------------|---|
| RP#061      | Melythina tiakana warrana (Heart of Country) Aboriginal Corporation | Melythina tiakana warrana members are direct descendants of the Aboriginal Ancestors from the Country of tebrakuna, known as the region of northeast Tasmania. Melythina tiakana warrana will preserve custodianship and pass on the cultural traditions, practices & knowledge's of our Ancestors, and conduct our business with cultural integrity. melythina tiakana warrana will operate on the premise of acknowledging that our Land is sacred, our Culture is precious, and we are a unique People. Considered to possibly have areas that may be within the EMBA of the TGP Operations. | Email with information package sent 2/9/2024 (Appendix D) | 5                     | No response given.                         | N/A                 | Maintain in database and continue consultation.                   |
| RP#055      | Mirimbiak Nations Aboriginal Corporation                            | Previously identified as relevant group, Indigenous Corporation that is located and   | Phone call to number provided on website on 18/9/24       | 1                     | Unable to get working contact information. | N/A                 | Unable to make any contact through available contact information. |

| Reference # | Relevant Person(s)                | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|-----------------------------------|--|---|-----------------------|-------------------------------------|---------------------|---|
|             |                                   | represents the indigenous population within OA and/or EMBA.  |   |                       |                                     |                     |   |
| RP#062      | Six Rivers Aboriginal Corporation | <p>Helps care and run programs for Tiagarra in Devonport and Panatana Milathina natural heritage site in North West Tasmania. The Six Rivers Aboriginal Corporation is an established organisation committed to supporting and empowering our community.</p> <p>With a strong focus on community education and continuing culture, the corporation is focused on instilling in youth a positive sense of culture and identity.</p> | Email with information package sent 2/9/2024 (Appendix D) | 3                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#063      | Tasmanian Aboriginal Centre       | Considered a relevant person that supports indigenous values and conservation within Tasmania that may have interest in the cultural impacts of operations and EMBA from TGP.  | Email with information package sent 2/9/2024 (Appendix D) | 4                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s)                                 | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|--|--|---|-----------------------|-------------------------------------|---------------------|---|
| RP#057      | Tasmanian Aboriginal Heritage Council              | The statutory Aboriginal Heritage Council was established in 2017 under the Aboriginal Heritage Act 1975. We are an independent body who advise the Tasmanian Government, land managers and owners on the protection and management of Aboriginal cultural heritage in Tasmania. Considered relevant due to their role advising government on protection of indigenous matters within Tasmania where TGP Operates. | Email with information package sent 2/9/2024 (Appendix D) | 4                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#060      | Tasmanian Regional Aboriginal Communities Alliance | The Tasmanian Regional Aboriginal Communities Alliance (TRACA) was developed to provide a mechanism to engage and advise Government at all levels regarding affairs affecting Aboriginal Tasmanians.   | Email with information package sent 2/9/2024 (Appendix D) | 3                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |

| Reference #   | Relevant Person(s)   | Reasoning for Relevance   | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary  | Assessment Required  | Ongoing Consultation  |
|---|--|---|---|-----------------------|--|--|---|
| <b>Non-Government Agency - Fisheries and Seafood Associations</b> |  |   |   |                       |  |  |   |
| <b>Commonwealth / Bass Strait</b>                                 |  |   |   |                       |  |  |   |
| RP#045  | Abalone Council Australia                                      | Fishery area located within the Operations and EMBA for TGP, there is potential intersection of OA and EMBA when conducting activities. | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.   | N/A  | Maintain in database and continue consultation.   |
| RP#034  | Australian Southern Bluefin Tuna Industry Association (ASBTIA) | Eastern Tuna and Billfish Fishery mapped within the Operations and EMBA area.   | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.   | N/A  | Maintain in database and continue consultation.   |
| RP#041  | Commonwealth Fisheries Association                             | Commonwealth Fisheries Association is a body representing groups within fisheries in Commonwealth areas where TGP Operates and EMBA.    | Email with information package sent 2/9/2024 (Appendix D) | 2                     | Undeliverable - no response.   | N/A  | Unable to obtain alternative contact information, remove from database.   |
| RP#033  | Eastern Tuna and Billfish Fishery                              | Organisation representing the Eastern Tuna and Billfish Fishery mapped within the Operations and EMBA area.                             | Email with information package sent 2/9/2024 (Appendix D) | 13                    | Reviewed and decided activities were low risk to the tuna fishing industry. Wanted to emphasise importance and value of SBT and ETBF species in the region, and BIA's in the Bass Strait, and how these have strong potential to interact with any | No further assessment required, concerns raised already discussed in EP when discussing the potential risks and control measures for protection of marine flora and fauna, marine environment and protection of other marine users | Maintain in database and continue consultation. Notify at least 48 hours prior to activity where concurrent survey/maintenance work and fishing activity may occur. |

| Reference # | Relevant Person(s)                    | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary   | Assessment Required  | Ongoing Consultation                            |
|-------------|---------------------------------------|--|---|-----------------------|---|--|---|
|             |                                       |  |   |                       | energy exploitation-related activities. Welcomes further dialogue to deconflict any issues before they arise. Also suggested another relevant stakeholder (Australian Bluefin Tuna Industry Association). | (Section 6.1, 6.2, and 6.3 respectively).<br><br><b>Action 1:</b> continuous dialogue with RP#033, particularly notification of activities where there is potential concurrent survey/maintenance work and fishing activities where vessels are likely to have close contact (referenced as Advance notice through the “48 hour look ahead” process implemented by some contracted oil and gas marine assets is acceptable and appreciated.)<br><br><b>Action 2:</b> Also consult with Australian Southern Bluefin Tuna Industry Association (complete already identified as relevant person/group - RP#034) |   |
| RP#037      | Scallop Management Advisory Committee | Bass Strait Central Zone Scallop Fishery within the Operating area and EMBA. | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.  | N/A  | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s)                               | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|--|--|---|-----------------------|-------------------------------------|---------------------|---|
| RP#049      | Seafood Industry Australia                       | The major body for seafood industry was considered relevant due to interest in fisheries and impact to seafood within the commonwealth and state waters where TGP Operates.  | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#036      | South East Management Advisory Committee (SEMAC) | Southern and Eastern Scalefish and Shark Fishery (SESSF) is a multi-sector, multi-species fishery that covers almost half of the Australian Fishing Zone. Considered to have potential intersection with OA and EMBA for activities conducted within the EP. | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s)                                     | Reasoning for Relevance   | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary   | Assessment Required  | Ongoing Consultation  |
|-------------|--|---|---|-----------------------|---|--|---|
| RP#031      | South East Trawl Fishing Industry Association (SETFIA) | Relevant Fishery Association within the Operations Area and EMBA. Their vision is to promote and protect the interests of members in all forms particularly within the Commonwealth Trawl Sector and shared fisheries." The Association's goals are to work with fishers, the fishery manager AFMA, other government departments and assessment scientists to set accurate total allowable catches (TACs), invest cost-recovered levies well, and ensure access to fishing grounds. | Email with information package sent 2/9/2024 (Appendix D) | 4                     | Referred to individual within organisation.<br><br>No comment on EP renewal | N/A.<br><br><b>Action:</b> contact relevant person within SETFIA ( <u>Complete</u> ) | Maintain in database and continue consultation.<br><br>RP#032 has been incorporated into RP#031 |
| RP#043      | Southern Rocklobster Limited                           | Fishery area located within the Operations and EMBA for TGP, there is potential intersection of OA and EMBA when conducting activities.   | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.  | N/A  | Maintain in database and continue consultation.   |

| Reference #     | Relevant Person(s)                              | Reasoning for Relevance   | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required    | Ongoing Consultation                            |
|-----------------|---|---|---|-----------------------|-------------------------------------|------------------------|---|
| RP#042          | Southern Shark Industry Alliance                | Fishery area located within the Operations and EMBA for TGP, there is potential intersection of OA and EMBA when conducting activities. | Contacted on 20/08/2024 via General Enquiry on Website. Transcript summary below:<br>Description of TGP EP work and request for relevant person(s) contact information. | 1                     | Responded to in RP#032              | Responded to in RP#032 | Maintain in database and continue consultation. |
| <b>Victoria</b> |   |   |   |                       |                                     |                        |   |
| RP#082          | Corner Inlet Fisheries Habitat Association      | Person or organisation to facilitate and encourage better habitat protection and stewardship of the local marine resource.              | Contacted on 12/10/2025 via General Enquiry on Website. Transcript summary below:<br>Description of TGP EP work and request for relevant person(s) contact information. | 2                     | No response given.                  | N/A                    | Maintain in database and continue consultation. |
| RP#083          | Eastern Victorian Sea Urchin Divers Association | Organisation representing Sea Urchin Divers.  | Contacted on 12/10/2025 via General Enquiry on Website. Transcript summary below:<br>Description of TGP EP work and request for relevant person(s) contact information. | 2                     | No response given.                  | N/A                    | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s)                                      | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary                                  | Assessment Required | Ongoing Consultation                            |
|-------------|---|--|---|-----------------------|--|---------------------|---|
| RP#030      | Lakes Entrance Fishermen's Cooperative Limited (LEFCOL) | The Co-operative has established itself as one of the most important voices in the Australian Fishing Industry and the largest (fleet and throughput) fishing co-operatives in Australia. AFMA industry associated contacts.   | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.   | N/A                 | Maintain in database and continue consultation. |
| RP#035      | Seafood Industry Victoria                               | As the leading voice on Victoria's seafood industry and responds on the industry's behalf - communicating and ensuring the flow of information between the industry, fisheries stakeholder groups and communities. Fisheries groups within the OA and EMBA when vessels conducting activities. | Email with information package sent 2/9/2024 (Appendix D) | 7                     | Supported consultation with members, no feedback or responses given. | N/A                 | Maintain in database and continue consultation. |
| RP#046      | Victorian Abalone Council                               | Fishery area located within the Operations and EMBA for TGP, there is potential intersection of OA and EMBA when conducting activities.  | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.   | N/A                 | Maintain in database and continue consultation. |

| Reference #     | Relevant Person(s)                          | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation  |
|-----------------|---|--|---|-----------------------|-------------------------------------|---------------------|---|
| RP#038          | Victorian Scallop Fishermans Association    | Located within the EMBA and OA as operating in the Bass Strait Central Zone Scallop Fishery, the association represents Victorian Scallop Fishermen and their Families. Based in Lakes Entrance Victoria, there is potential intersection of OA and EMBA when conducting activities. | Email with information package sent 2/9/2024 (Appendix D) | 1                     | Email address invalid - no response | N/A                 | Unable to obtain alternative contact information, remove from database.<br><br>Replaced with Scallop Management Advisory Committee (RP#037) |
| <b>Tasmania</b> |   |  |   |                       |                                     |                     |   |
| RP#039          | Scallop Fishermen's Association of Tasmania | Bass Strait Central Zone Scallop Fishery within the Operating area and EMBA, there is potential intersection of OA and EMBA when conducting activities.  | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation.   |

| Reference # | Relevant Person(s)                            | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|---|--|---|-----------------------|-------------------------------------|---------------------|---|
| RP#040      | Seafood Industry Tasmania                     | The peak body representing the people of the seafood industry. People on boats. People producing fish. People catching fish. People farming fish. We support people who live in regional communities. There is potential intersection of OA and EMBA when conducting activities with the groups represented by the organisation. | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#047      | Tasmanian Abalone Council                     | Fishery area located within the Operations and EMBA for TGP, there is potential intersection of OA and EMBA when conducting activities.  | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |
| RP#044      | Tasmanian Rock Lobster Fishermans Association | Fishery area located within the Operations and EMBA for TGP, there is potential intersection of OA and EMBA when conducting activities.  | Email with information package sent 2/9/2024 (Appendix D) | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |

| Reference #                                       | Relevant Person(s)                | Reasoning for Relevance   | First Contacted  | Number of Engagements | Relevant Person(s) Feedback Summary                   | Assessment Required | Ongoing Consultation                            |
|---|-----------------------------------|---|--|-----------------------|---|---------------------|---|
| <b>Non-Government Agency - Offshore Operators</b> |                                   |   |  |                       |   |                     |   |
| RP#084  | 3D Energi                         | Person or organisation with activities as oil and gas company with licenses offshore from Gippsland.                              | Email with information package sent 13/10/2025 (Appendix D)  | 2                     | No response given.                                    | N/A                 | Maintain in database and continue consultation. |
| RP#052  | APA Group - BassLink              | Operate within EMBA, whilst considered low likelihood, there is potential intersection of OA and EMBA when conducting activities. | Email with information package sent 2/9/2024 (Appendix D)  | 4                     | No comment at this time.                              | N/A                 | Maintain in database and continue consultation. |
| RP#051  | Cooper Energy - General enquiries | Operate within EMBA, whilst considered low likelihood, there is potential intersection of OA and EMBA when conducting activities. | Contacted on 4/09/2024 via General Enquiry on website <a href="https://cooperenergy.com.au/contact">https://cooperenergy.com.au/contact</a> . Description of TGP EP work and request for relevant person(s) contact information. | 2                     | No response given. No other contact details available | N/A                 | Maintain in database and continue consultation. |
| RP#085  | Emperor Energy                    | Person or organisation with activities as oil and gas company with licenses offshore from Gippsland.                              | Email with information package sent 13/10/2025 (Appendix D)  | 2                     | No response given.                                    | N/A                 | Maintain in database and continue consultation. |

| Reference #                           | Relevant Person(s)                  | Reasoning for Relevance   | First Contacted  | Number of Engagements | Relevant Person(s) Feedback Summary  | Assessment Required | Ongoing Consultation  |
|---------------------------------------|-------------------------------------|---|--|-----------------------|--|---------------------|---|
| RP#050                                | Esso Australia Resources Pty Ltd    | Operate within EMBA, whilst considered low likelihood, there is potential intersection of OA and EMBA when conducting activities.           | Email with information package sent 2/9/2024 (Appendix D)  | 2                     | No response given.   | N/A                 | Maintain in database and continue consultation.   |
| RP#053                                | Indigo Cable                        | Cable intersects with the TGP, whilst considered low likelihood, there is potential intersection of OA and EMBA when conducting activities. | Email with information package sent 2/9/2024 (Appendix D)  | 3                     | No response given.   | N/A                 | Maintain in database and continue consultation.   |
| RP#086                                | Star of the South / Southern Ten    | Organisation as commercial venture proposing an offshore wind farm project of the South Coast of Gippsland.                                 | Contacted on 13/10/2025 via General Enquiry on Website. Transcript summary below: Description of TGP EP work and request for relevant person(s) contact information. | 6                     | Request was made for ongoing communications during Southerly Ten's construction phase.<br><br>Action: A contact was provided to Southerly Ten. | N/A                 | Ongoing consultation, particularly during Southern Ten's construction phase to manage vessel movements within the region. |
| <b>Non-Government Agency - Unions</b> |                                     |   |  |                       |  |                     |   |
| RP#087                                | Maritime Industry Australia Limited | Acts as organisation established to be the voice and advocate of the  | Email with information package sent 13/10/2025 (Appendix D)  | 3                     | No response given.   | N/A                 | Maintain in database and continue consultation.   |

| Reference #                                       | Relevant Person(s)                          | Reasoning for Relevance   | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary   | Assessment Required | Ongoing Consultation                            |
|---|---|---|---|-----------------------|---|---------------------|---|
|   |   | Australian maritime industry.   |   |                       |   |                     |   |
| RP#088  | Maritime Union of Australia                 | Acts as union for waterside workers, seafarers, port workers, professional divers, and office workers associated with Australian ports                                  | Email with information package sent 13/10/2025 (Appendix D) | 2                     | No response given.  | N/A                 | Maintain in database and continue consultation. |
| <b>Non-Government Agency - Oil Spill Response</b> |   |   |   |                       |   |                     |   |
| RP#089  | Australian Marine Oil Spill Centre (AMOSOC) | Function as an organisation set up by the petroleum industry to enable a quick and effective response to oil spills around the Australian coastline. Relevant for OPEP. | Email with information package sent 13/10/2025 (Appendix D) | 9                     | Requested information on emergency response as detailed in the EP. (completed - copy sent 29-10-25)<br><br>AMOSOC advised that AMOSOC's services and equipment are only available to non-members upon contract approval. As part of the TGP OPEP testing arrangements, non-member status will be reviewed prior to commencing |                     |   |

| Reference # | Relevant Person(s)                       | Reasoning for Relevance   | First Contacted  | Number of Engagements | Relevant Person(s) Feedback Summary  | Assessment Required | Ongoing Consultation                            |
|-------------|--|---|--|-----------------------|--------------------------------------|---------------------|---|
|             |  |   |  |                       | works. Table 9-1 updated to reflect. |                     |   |
| RP#090      | Oil Response Company of Australia (ORCA) | Acts as a provider of oil spill response equipment operation training.    | Contacted on 13/10/2025 via General Enquiry on Website. Transcript summary below: Description of TGP EP work and request for relevant person(s) contact information. | 2                     | No response given.                   | N/A                 | Maintain in database and continue consultation. |
| RP#091      | Wildlife Victoria                        | Interest as community organisation providing Wildlife Emergency Response. | Email with information package sent 13/10/2025 (Appendix D)  | 4                     | No response given.                   | N/A                 | Maintain in database and continue consultation. |

| Reference #                    | Relevant Person(s)                 | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary   | Assessment Required | Ongoing Consultation                            |
|--------------------------------|------------------------------------|--|---|-----------------------|---|---------------------|---|
| Non-Government Agency          |                                    |  |   |                       |   |                     |   |
| Conservation / Interest Groups |                                    |  |   |                       |   |                     |   |
| RP#065                         | Australian Conservation Foundation | National ENGO that work specifically to influence governments and businesses to protect the animals, rivers and reefs and hold decision-makers to account. As activists in the climate change sector and move away from fossil fuels, relevant to the gas operations of TGP. | Email with information package sent 15/11/2024 (Appendix D)   | 2                     | No response given.  | N/A                 | Maintain in database and continue consultation. |
| RP#092                         | Committee for Gippsland            | Interests as independent group established to represent all sectors of business, industry, and community views to collaboration on regional priorities to benefit Gippsland communities.   | Contacted on 13/10/2025 via General Enquiry on Website. Transcript summary below:<br>Description of TGP EP work and request for relevant person(s) contact information. | 6                     | Requested a meeting - held on 31-Oct-2025.<br><br>No action arose from meeting. | N/A                 | Maintain in database and continue consultation. |
| RP#073                         | Environment Tasmania               | ENGO in Tasmania, that aims to conserve, connect, and inspire stewardship of lutruwita/Tasmania's natural landscapes. Has connections to South-East consultation, the area   | Contacted on 15/11/2024 via General Enquiry on website. Description of TGP EP work and request for relevant person(s) contact information.                              | 2                     | No response given   | N/A                 | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s)   | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|----------------------|--|---|-----------------------|-------------------------------------|---------------------|---|
|             |                      | in which TGP Operates.   |   |                       |                                     |                     |   |
| RP#070      | Environment Victoria | ENGO in Victoria with key focus on Climate change with the aim to establish a sustainable society that protects and values nature.   | Email with information package sent 15/11/2024 (Appendix D) | 2                     | No response given                   | N/A                 | Maintain in database and continue consultation. |
| RP#066      | Friends of the Earth | A global ENGO - the Australian branch - the Friends of the Earth are actively working with frontline communities around the country to resist the spread of the nuclear, coal and gas industry, and to protect forests from further devastation. They are also supporting communities transitioning away from fossil fuels and logging industries to create environmentally and socially just solutions. | Email with information package sent 15/11/2024 (Appendix D) | 2                     | No response given                   | N/A                 | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s)               | Reasoning for Relevance  | First Contacted  | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|----------------------------------|--|--|-----------------------|-------------------------------------|---------------------|---|
| RP#071      | Gippsland Environment Group Inc. | ENGO in Victoria, specifically along the Gippsland region that works in lobbying against environmental threats on the unceded lands of the GunaiKurnai, Yaitmathang, Ngarigo and Bidwell Peoples.  | Email with information package sent 15/11/2024 (Appendix D)  | 3                     | No response given                   | N/A                 | Maintain in database and continue consultation. |
| RP#067      | Greenpeace                       | Global ENGO that focuses on fossil fuels, protecting the oceans and climate justice.   | Email with information package sent 15/11/2024 (Appendix D)  | 2                     | No response given                   | N/A                 | Maintain in database and continue consultation. |
| RP#074      | Tourism Victoria                 | As the Victorian Government department for tourism, the department is positioned well to provide feedback and advice on the impacts of the TGP in Victoria and invaluable resource for insight into potential impacts of the TGP in the OA and EMBA and as a key industry contact. | Contacted on 15/11/2024 via General Enquiry on website. Description of TGP EP work and request for relevant person(s) contact information. | 2                     | No response given                   | N/A                 | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s) | Reasoning for Relevance   | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|--------------------|---|---|-----------------------|-------------------------------------|---------------------|---|
| RP#072      | Wildcare Tasmania  | <p>ENGO in Tasmania that provides groups for community volunteers to volunteer to care for wild life and natural places. Includes DEal Island in the Kent group, along the TGP OA and EMBA. Wildcare Tasmania is a community of members, volunteers and donors with a shared commitment to caring for our wild places, wildlife and cultural heritage.</p> <p>The group exist to keep Tasmania wild by bringing people together for the important role of looking after the beautiful natural places and species, for today and for future generations to experience and enjoy.</p> | Email with information package sent 15/11/2024 (Appendix D) | 3                     | No response given                   | N/A                 | Maintain in database and continue consultation. |

| Reference #             | Relevant Person(s)           | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary   | Assessment Required | Ongoing Consultation                            |
|-------------------------|------------------------------|--|---|-----------------------|---|---------------------|---|
| RP#068                  | Wilderness Society Tasmania  | National ENGO - Tasmanian division - with the aim of protecting, promoting, and restoring wilderness and natural processes across Australia for the survival and ongoing evolution of life on Earth. A key focus is on climate change. | Email with information package sent 15/11/2024 (Appendix D) | 2                     | No response given   | N/A                 | Maintain in database and continue consultation. |
| RP#069                  | Wilderness Society Victoria  | National ENGO - Victorian division - with the aim of protecting, promoting, and restoring wilderness and natural processes across Australia for the survival and ongoing evolution of life on Earth. A key focus is on climate change. | Email with information package sent 15/11/2024 (Appendix D) | 2                     | No response given   | N/A                 | Maintain in database and continue consultation. |
| <b>Local Businesses</b> |                              |  |   |                       |   |                     |   |
| RP#093                  | Australian WildCatch Fishing | Acts as business operating five fishing vessels in Gippsland and supports a variety of other vessels, with the design and construction of fishing gear, crew placement, quota,   | Email with information package sent 13/10/2025 (Appendix D) | 3                     | Advised that TGP should consult with SETFIA.<br><br><b>Action:</b> TGP consult with SETFIA (complete) | N/A                 | Maintain in database and continue consultation. |

| Reference #                       | Relevant Person(s)                       | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-----------------------------------|--|--|---|-----------------------|-------------------------------------|---------------------|---|
|                                   |  | licence management, and associated administration.   |   |                       |                                     |                     |   |
| <b>Recreational Organisations</b> |  |  |   |                       |                                     |                     |   |
| RP#094                            | Boating Industry Association of Victoria | Not-for-profit organisation and the peak body representing the recreational and light commercial marine industry.        | Email with information package sent 13/10/2025 (Appendix D)   | 2                     | No response given                   | N/A                 | Maintain in database and continue consultation. |
| RP#095                            | Game Fishing Association of Victoria     | Acts as the governing body for Game Fishing in Victoria.   | Email with information package sent 13/10/2025 (Appendix D)   | 2                     | No response given                   | N/A                 | Maintain in database and continue consultation. |
| RP#096                            | Seaspray Surf Lifesaving Club            | Organisation as Surf Lifesaving Club   | Contacted on 13/10/2025 via General Enquiry on Website. Transcript summary below:<br>Description of TGP EP work and request for relevant person(s) contact information. | 3                     | No response given                   | N/A                 | Maintain in database and continue consultation. |
| RP#097                            | Victoria Game Fishing Club               | Acts as governing body for Game Fishing in Victoria.   | Email with information package sent 13/10/2025 (Appendix D)   | 2                     | No response given                   | N/A                 | Maintain in database and continue consultation. |
| RP#064                            | Victorian Recreational Fishing (VRFish)  | Acts as organisation representing Victorian Recreational Fishing in Victoria.<br>Nominated / referred by VFA (on 5/9/24) | Email with information package sent 6/9/2024  | 2                     | No response given.                  | N/A                 | Maintain in database and continue consultation. |

| Reference # | Relevant Person(s) | Reasoning for Relevance  | First Contacted   | Number of Engagements | Relevant Person(s) Feedback Summary | Assessment Required | Ongoing Consultation                            |
|-------------|--------------------|--|---|-----------------------|-------------------------------------|---------------------|---|
| RP#098      | Yachting Victoria  | Organisation providing sailing advice for the South East of Australia. | Contacted on 13/10/2025 via General Enquiry on Website. Transcript summary below:<br>Description of TGP EP work and request for relevant person(s) contact information. | 2                     | No response given                   | N/A                 | Maintain in database and continue consultation. |

## Appendix F Environment Performance Outcomes, Performance Standards and Measurement Criteria

| Environmental Performance Objective   | Control Measure   | Environmental Performance Standard  | Measurement Criteria  | EP Reference    |
|---|---|---|---|-----------------|
| <p>E1: No serious or irreversible harm to a threatened or migratory listed species.</p> <p>E1a: Impacts to marine fauna from underwater sound emissions will be limited to temporary behaviour changes localised to the noise source, with no species population-level impacts.</p> <p>EP1b: Any whale can continue to utilise the area without injury (i.e. PTS or TTS)</p> <p>EP1c: Activities do not cause displacement of any blue whale from the foraging area.</p> <p>EP1d: Activities do not prevent any southern right whale from utilising a migration or reproduction BIA or habitat critical to survival.</p> <p>E1e: The risk of behavioural disturbance to southern right whales inside and adjacent to BIAs and habitat</p> | <p>CM1: Marine mammal interaction management actions (A6, A2.1, A5.2)<sup>1</sup></p> | <p>In accordance with the EPBC Regulations 2000 (Part 8, Division 8.1 - cetaceans) and Wildlife (Marine Mammals) Regulations 2019 (Part 3(9)) (Victoria):</p> <ul style="list-style-type: none"> <li>A no-approach and caution zone will be established and adhered to for cetaceans and seal colonies. The vessel or USV will not approach closer than; - No-approach zone: Whales 100m, Dolphins 50m, Sea Colony (pupping season – Nov to Dec) 100m, Sea Colony (Jan to Oct) 50m - Caution zone – Whales 300m, Dolphins 150m and Sea Colony (Nov to Dec) 200m</li> <li>Operating speeds of 6 knots (in Commonwealth waters)/ 5 knots (in State waters) will apply within caution zones (300m of a whale, 150m of a dolphin), and Vessel Master/USV operator to avoid sudden changes in speed or direction;</li> <li>If the cetacean shows signs of being disturbed, the vessel/USV will immediately move away from the caution zone at a constant speed of less than 6 knots (Commonwealth waters)/ 5 knots (State waters);</li> <li>The vessel/USV will not restrict the path of, or pursue, a cetacean or seal;</li> <li>During seal pupping season (November to December), interaction with seals will be avoided and vessel/USV speeds will be reduced to less than 10 knots within 200 m of a seal colony and 5 knots within 100 m of a colony;</li> </ul> <p>A Vessel Master or delegate will always be on duty</p> | <p>Records demonstrate no breaches with EPBC Regulations 2000 - Part * Division 8.1, including no breaching of vessel speeds in caution and no-approach zones; the presence of marine mammals in caution and no-approach zones.</p> | <p>6.2, 6.5</p> |
|   | <p>CM40: Cetacean sightings (A5.4, A6.5)<sup>1</sup>, (A4.2)<sup>2</sup></p>          | <p>Any cetacean strandings and sightings are to be reported in accordance with Table 8-3 to the appropriate regulatory authority:</p> <ul style="list-style-type: none"> <li>Victorian state waters – DEECA</li> <li>Tasmania state waters – Whale Hotline (NRE)</li> <li>Commonwealth waters – DCCEEW</li> </ul> <p>Collisions with whales within Australia to be reported to the Australian Marine Mammal Centre</p>  | <p>Records demonstrate reporting of any cetacean, cetacean ship strike incidents or any injury / fatality to marine mammals, to DCCEEW and NRE (if in Tasmanian waters) or DEECA (if in Victorian waters). Refer to Table 8-3.</p>  | <p>6.2, 6.5</p> |

| Environmental Performance Objective | Control Measure   | Environmental Performance Standard   | Measurement Criteria  | EP Reference |
|-------------------------------------|---|--|---|--------------|
| critical to survival is minimised.  | CM3: Cetacean pre-start procedure (A2.1, A5.2, A5.4) <sup>1</sup> , (A2.4) <sup>2</sup> | <p>An observation zone will be established for crewed vessels of 240 m and 110 m for USVs undertaking SSS activities.</p> <p>While enroute to the activity area,</p> <ul style="list-style-type: none"> <li>the Vessel Master and crew on board a vessel will maintain watch for cetaceans (including pygmy blue whales and southern right whales) when approaching or in the observation zone.</li> </ul> <p>Pre-start observations:</p> <ul style="list-style-type: none"> <li>30 minutes prior to commencing SSS surveys or DP operations a pre-start visual observation will be undertaken within the observation zone.</li> <li>If a whale is observed during the pre-start observations, SSS activity or DP operations will be delayed for 30 minutes.</li> <li>If no cetacean is sighted for 30 minutes, SSS or DP operations can commence. (Note: soft start is not possible for SSS equipment).</li> </ul> <p>The vessel/USV will maintain continuous observations during daylight hours for pygmy blue whales and southern right whales while within the observation zone.</p> | Records demonstrate that the pre-start procedure was implemented prior to commencing DP operations or acoustic surveys. Records to include species identified and actions taken.  | 6.2, 6.5     |
|                                     | CM43: Cetaceans operations procedure (A2.1, A5.2) <sup>1</sup> , (A2.4) <sup>2</sup>    | <p>If a southern right whale or blue whale is sighted within the observation zone (240 m of the vessel when on DP or 110 m using SSS survey equipment from the USV):</p> <ul style="list-style-type: none"> <li>The vessel will cease operations if safe to do so. The vessel will not commence or continue unless the whale has not been observed for a continuous 30 minutes within the observation zone.</li> <li>If it is not safe to cease operations – the vessel will adjust heading, as far as possible, until the whale has moved beyond the observation zone or has not been sighted for 30 minutes.</li> </ul> <p>If already using DP and it is safe to do so, DP operations will be ceased until pygmy blue whales or southern right whales have not</p>   | Records demonstrate any whale sightings (and other cetaceans), and actions taken as a result of sightings (i.e. ceasing operations or moving location) in accordance with the Operations Procedure for Whales requirements. | 6.2, 6.5     |

| Environmental Performance Objective | Control Measure   | Environmental Performance Standard   | Measurement Criteria   | EP Reference |
|-------------------------------------|---|--|--|--------------|
|                                     |   | been observed for a continuous 30 minutes within the observation zone.   |  |              |
|                                     | CM52: Cetacean observations (A2.1, A5.2) <sup>1</sup> , (A2.3, A2.4) <sup>2</sup> | <p>Bridge crew / nominated Watchkeeper / USV operator are trained and competent in whale observation and species identification as part of their normal requirements and ability to comply with Part 8 Division 8.1 of the Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations), which is implemented via the Australian National Guidelines for Whale and Dolphin Watching 2017 (Commonwealth of Australia, 2017).</p> <ul style="list-style-type: none"> <li>Trained Bridge crew / nominated Watchkeeper / USV operator undertake continuous observations for cetaceans during daylight hours</li> <li>For crewed vessels the Bridge crew / Watchkeeper is responsible for maintaining the safe navigation of the vessel including keeping compliance with COLREGs Rule 5 which requires that the vessel always maintains a proper look-out by sight, hearing and all available means appropriate to the prevailing circumstances and conditions, including marine fauna observations.</li> <li>For crewed vessels the Bridge crew / Watchkeepers to hold Certificates of Competency recognized by the vessel Flag State which can only be obtained by completing years of sea service, including understudy time on watch on the bridge.</li> <li>TGPPL verifies the trained Bridge Crew/ Watchkeeper training and certification as part of pre-hire and routine EP compliance inspections.</li> <li>TGPPL verifies that Bridge crew / Watchkeeper / USV operator have been trained in whale observation.</li> <li>Crewed vessels have multiple pairs of binoculars available to Bridge Crew / Watchkeepers</li> </ul> <p>TGPPL verifies that Marine fauna identification charts are posted onboard or in the USV control centre.</p> | <p>Records demonstrate that Bridge Crew / Watchkeeper /USV operator has been trained in whale observations.</p> <p>Records demonstrate that Bridge Crew / Watchkeeper have certificates of competency recognized by vessel Flag State.</p> <p>Records demonstrate that crewed vessels have marine fauna identification charts and binoculars on board, as part of the TGPPL Pre-hire assessment records.</p> | 6.2, 6.5     |
|                                     | CM53: Cetacean night-time and low visibility procedure                            | <ul style="list-style-type: none"> <li>Wherever practicable, commence SSS or DP operations during daylight hours.</li> </ul>   | Records demonstrate any whale sightings (and other cetaceans), and actions taken as a result   | 6.2, 6.5     |

| Environmental Performance Objective  | Control Measure   | Environmental Performance Standard  | Measurement Criteria  | EP Reference       |
|--|---|---|---|--------------------|
|  | (A2.1, A5.2, A5.4) <sup>1</sup> , (A2.4) <sup>2</sup>                               | <ul style="list-style-type: none"> <li>SSS or DP operations are not to commence if there have been 3 or more whale-instigated shutdowns in the 3 hours preceding sunset or low visibility occurring.</li> </ul> <p>SSS or DP operations will not commence or continue if a cetacean (including a pygmy blue whale or southern right whale) has been observed within 240m of the crewed vessel or within 110 m of SSS being operated from a USV, 30 minutes prior to sunset or low visibility occurring.</p>   | of sightings (i.e. ceasing operations or moving location) in accordance with the Night-time and Low Visibility procedure requirements.  |                    |
|  | CM39: Lighting <sup>3</sup> (A1, A7) <sup>4</sup> (A8 <sup>5</sup> )                | <p>Lighting will be limited to that required for safety work/navigation. This will include:</p> <ul style="list-style-type: none"> <li>Closing shutters/curtains on accommodation windows and on the bridge (where they do not interfere with navigation).</li> <li>Turning lights off in works areas on vessels that are not in use</li> <li>Turning crane lights off (that are not associated with safety requirements)</li> <li>External deck lighting will be directed to working areas (rather than overboard).</li> </ul>   | Inspection verifies no excessive light is being used beyond that required for safety work/navigation.   | 6.2, 8.5.3.1       |
|  | CM42: Maintain seabird records and reporting  | <p>Maintain records of any seabird interactions.</p> <p>Follow regulatory reporting requirements for seabird injuries or fatalities (refer to Table 8-3 of the EP)</p>  | Records demonstrate avian interactions and regulatory reporting of seabird injuries or fatalities.  | 6.2                |
| E2: TGP personnel and contractors are aware of environmental sensitivities within the OA and their requirements under this EP. | CM2: Environmental Inductions (A2.1, A5.2, A5.4) <sup>1</sup> , (A2.4) <sup>2</sup> | <p>Prior to commencing activities, all personnel involved in the offshore activities will undertake an environmental induction that will cover the environmental sensitivities of the Operational Area and requirements under the Environment Plan (refer to Section 8.4.2), including:</p> <ul style="list-style-type: none"> <li>the presence or potential for underwater cultural heritage.</li> <li>Marine mammal obligations under the EPBC Action Policy Statement 2.1, Part A, which includes: <ul style="list-style-type: none"> <li>Whale observation, species identification and distance measurement and reporting.</li> <li>Providing photos/pictures of the different megafauna expected in the area at the time of the activity, including</li> </ul> </li> </ul> | <p>Induction records demonstrate that vessel crews/USV operators have been informed of:</p> <ul style="list-style-type: none"> <li>environmental sensitivities in the OA</li> <li>their obligations under the EPBC Act Policy Statement 2.1, Part A.</li> <li>presence of known or potential</li> </ul> | 6.2, 6.3, 6.5, 8.4 |

| Environmental Performance Objective   | Control Measure   | Environmental Performance Standard  | Measurement Criteria  | EP Reference |
|---|---|---|---|--------------|
|   |   | <p>the location of the mammal identification chats on board on display on the vessel.</p> <ul style="list-style-type: none"> <li>- Instructions on the pre-start requirements.</li> <li>- Instructions on data to be recorded for marine megafauna sightings, including time of observation, type and number of species observed and estimated location coordinated. Note if there is any uncertainty on species type the precautionary principle applies.</li> </ul> | underwater cultural heritage.   |              |
| E3: Lighting from navigation equipment kept to what is required for safe operations | CM35: Navigational equipment  | Vessels will meet navigation equipment and radar requirements of AMSA Marine Order Part 30 (Prevention of collisions).  | Records demonstrate that vessel class certifications are current.                                       | 6.2, 6.10    |
| E4: No disturbance to benthic habitats  | CM5: Vessel work procedures for lifts, bulk transfers and cargo loading | <p>All lifts conducted in accordance with applicable vessel work procedures to limit the potential for dropped objects. This shall include:</p> <ul style="list-style-type: none"> <li>• the security of the load shall be checked prior to commencing lifts</li> <li>• loads shall be covered if there is a risk of loss of loose materials</li> </ul>   | Records show that lifts are conducted in accordance with the applicable vessel work procedures.         | 6.3, 6.11    |
|   | CM6: Maintenance and repair procedures                                  | Maintenance and repair activities e.g. jetting, concrete mattress / grout bag filling and installation will be conducted in accordance with approved procedures.  | Records verify maintenance and repair activities are conducted in accordance with procedures.           | 6.3, 6.11    |
|   | CM8: Planned Maintenance System (PMS) – Lifting gear                    | Visual inspection of lifting gear is undertaken every quarter by a qualified competent person (e.g. maritime officer) and lifting gear is tested regularly in line with the PMS.  | PMS records and Lifting Register verifies that inspections and testing have been conducted to schedule. | 6.3          |
|   | CM9: Cargo Securing Manual  | All cargo securely fastened or stored during transport in accordance with approved Cargo Securing Manual.   | A completed pre-departure inspection checklist verifies cargo is securely sea-fastened.                 | 6.3, 6.11    |

| Environmental Performance Objective  | Control Measure   | Environmental Performance Standard   | Measurement Criteria   | EP Reference |
|--|---|--|--|--------------|
|  | CM10: Procedure to recover dropped objects                                  | <p>Vessel, ROV, or crane may be used to attempt recovery of material lost overboard. Where safe and practicable to do so, retrieval will consider:</p> <ul style="list-style-type: none"> <li>risk to personnel to retrieve object</li> <li>whether the location of the object is in recoverable water depths</li> <li>object's proximity to subsea infrastructure</li> <li>ability to recover the object (i.e. nature of object, lifting equipment, or, ROV availability and suitable weather).</li> </ul> <p>Dropped objects / waste that remain in the OA will undergo an impact assessment and be added to the register (refer to CM47).</p> | <p>Records demonstrate the recovery of material dropped into the marine environment.</p> <p>Records demonstrate outcomes of the safe and practical evaluation, including an impact assessment for the objects remaining.</p> | 6.3, 6.7     |
| E4: No disturbance to benthic habitats<br>E5: No disturbance to underwater cultural heritage | CM4: No anchoring   | TGP vessels will not anchor in the Operating Area (unless in an emergency)   | Records demonstrate no anchoring occurred in the Operating Area (unless in an emergency).  | 6.3, 6.11    |
| E5: No disturbance to underwater cultural heritage   | CM47: Cultural heritage protection  | Vessel GIS contains locations of known cultural heritage sites in vicinity of pipeline and proposed activities.  | Verification that Vessel GIS contains any known cultural heritage sites within activity area.  | 6.3          |
|  | CM48: Underwater Cultural Heritage Identification procedure                 | Where potential underwater cultural heritage is newly identified, the Underwater Cultural Heritage Identification Procedure (Section 8.6.9) will be implemented.   | <p>Records demonstrate the identified cultural heritage.</p> <p>Records demonstrate the notification of cultural heritage finds to Regulators.</p>   | 6.3, 8.6.9   |
| E6: Register of equipment temporarily stored on the seabed                                   | CM46: Monitoring and removal of temporarily stored equipment on the seabed. | <ul style="list-style-type: none"> <li>An ROV survey will be undertaken after any maintenance or repair activity to confirm temporary equipment has been removed.</li> <li>If removal is not possible during the maintenance or repair activity, an assessment shall be conducted to determine the impact of temporarily storing equipment on the seabed.</li> </ul>   | <p>As left survey confirms temporarily stored equipment has been removed.</p> <p>Records confirm assessment of</p>   | 6.3          |

| Environmental Performance Objective   | Control Measure  | Environmental Performance Standard  | Measurement Criteria  | EP Reference       |
|---|--|---|---|--------------------|
|   |  | <ul style="list-style-type: none"> <li>For any equipment temporarily stored on the seabed, TGPPL will develop a program for tracking and removal. Tracking will include maintaining a register with a description of the equipment and storage location.</li> </ul> | temporarily stored equipment.<br>Records confirm register of temporarily stored equipment, including equipment details and location |                    |
| E7: Undertake the activity in a manner that will not interfere with other marine users to a greater extent than is necessary for the exercise of right conferred by the titles granted. | CM11: Pre-start notifications  | TGP to notify AHS, no less than four weeks prior to commencement of activities, to allow generation of navigation warnings (including Notice to Mariners).  | Records demonstration that Notice to Mariners notifications were made prior to the commencement of operations.                      | 6.4, 6.10          |
| E8: Impacts to relevant marine users will be limited through the provision of appropriate information / notification  | CM12: Navigational Charts  | Pipeline route and AMSA safety zones shown on marine navigation charts, prohibiting anchoring within 500 m of the pipeline.   | Marine navigation charts show TGP route and AMSA safety zones.  | 6.4, 6.10, 6.11    |
| E9: Vessel navigation systems to operate in accordance with Marine Order 21 (Safety of Navigation and Emergency Procedures)   | CM13: Vessels to adhere to the navigation safety requirements including the Navigation Act 2012 and any subsequent Marine Orders | Vessels compliant with Navigation Act and Marine Order 21 (Safety of navigation and emergency procedures) 2016.   | Marine assurance inspection records demonstrate compliance with standard maritime safety procedures.                                | 6.4, 6.10, 8.5.3.1 |
| E10: Reporting of environmental incidents, campaign   | CM41: End of survey cetacean report  | TGPPL will prepare a report for DCCEEW, to be submitted within two months of completing the survey, that details any cetacean sightings or interactions. The report will include:   | Records demonstrate submission of End of Survey Cetacean report.  | 6.2, 6.5           |

| Environmental Performance Objective  | Control Measure                                       | Environmental Performance Standard  | Measurement Criteria   | EP Reference |
|--|---|---|--|--------------|
| activities, environmental performance and completion of EP activities is in accordance with this EP                              |   | <ul style="list-style-type: none"> <li>the location, date and start time of the survey;</li> <li>name, qualifications and experience of any personnel trained in marine fauna identification involved in the survey</li> <li>the location, times and reasons when observations were hampered by poor visibility or high winds</li> <li>the location and time of any start-up delays, power downs or stop work procedures instigated as a result of whale sightings</li> <li>the location, time and distance of any whale sighting including species where possible</li> <li>the date and time of survey completion</li> </ul> |  |              |
|  | CM57: Environmental reporting                         | TGPPL will ensure that all reporting obligation listed in Table 8-3 of the EP are met.  | Records demonstrate environmental reporting to regulators in accordance with Table 8-3 of the EP.  | 8.6.5        |
| E11: Vessel combustion systems operate in accordance with MARPOL Annex VI (Prevention of Air pollution from Ships) requirements. | CM14: Compliance with MARPOL Annex VI - air pollution | <ul style="list-style-type: none"> <li>Vessels (as appropriate to class) hold IAPP and operate in accordance with Ship Energy Efficiency Management Plan.</li> <li>Sulphur content of fuel complies with Regulation 14 (i.e. is no higher than 0.5% m/m).</li> <li>All combustion equipment maintained in accordance with planned maintenance system (PMS), including engines and thrusters.</li> <li>Vessels with diesel engines &gt;130kW hold valid EIAPP certification and NOx emission levels comply with Regulation 13.</li> </ul>  | <p>Marine assurance inspection records demonstrate compliance with standard maritime safety procedures, including:</p> <ul style="list-style-type: none"> <li>Vessel certification is current.</li> <li>Manifests for fuel transfers verify use of low sulphur fuel.</li> <li>PMS records verify that combustion equipment is maintained according to schedule.</li> <li>- Certification documentation and records verify</li> </ul> | 6.6, 8.5.3.1 |

| Environmental Performance Objective  | Control Measure   | Environmental Performance Standard  | Measurement Criteria   | EP Reference |
|--|---|---|--|--------------|
|  |   |   | compliance with Regulation 13.   |              |
| E12: Sewage discharges comply with MARPOL Annex IV (Prevention of Pollution by Sewage from Ships)            | CM15: Compliance with MARPOL Annex IV - sewage treatment plant          | <p>Vessels comply with MARPOL Annex IV, by:</p> <ul style="list-style-type: none"> <li>Having sewage treated in MARPOL Annex IV compliant sewerage treatment plant.</li> <li>Discharge of comminuted and disinfected sewage using a MARPOL-compliant sewerage treatment plant at a distance of no less than 3NM from nearest land.</li> <li>Discharge of untreated sewage at a distance of no less than 12 NM from nearest land.</li> </ul> | <p>International Sewage Pollution Prevention (ISPP) certification is current.</p> <p>Records confirm sewerage treatment plant meets MARPOL Annex IV.</p> <p>Records confirm treated or untreated sewage discharged no less than 3NM or 12NM distant from nearest land, respectively.</p> | 6.7          |
|  | CM16: Planned Maintenance System (PMS) – sewage treatment plant         | Sewerage treatment plant maintained in accordance with the vessel PMS schedule  | PMS records verify sewerage treatment plant maintained in accordance with schedule.  | 6.7          |
| E13: Food waste discharges comply with MARPOL Annex V (Prevention of Pollution by Garbage from Ships)        | CM17: Discharge criteria for food waste                                 | Before food waste can be discharged to the marine environment it will be macerated to $\leq 25$ mm (using an onboard macerator) in compliance with MARPOL Annex V.  | Garbage Record Book shows that putrescible waste is macerated before discharge   | 6.7          |
|  | CM19: Planned Maintenance System (PMS) – food macerator                 | Macerator maintained in accordance with the vessel PMS schedule   | PMS records verify macerator maintained in accordance with schedule.   | 6.7          |
| E14: Bilge/deck drainage discharges from vessels comply with MARPOL Annex I (Prevention of Pollution by Oil) | CM20: Compliance with MARPOL Annex I - prevention of pollution from oil | TGPPL to verify the vessel has an oily water separator that meets MARPOL Annex I requirements (as appropriate to vessel class).   | Records demonstrate that the vessel has an International Oil Pollution Prevention (IOPP) certificate or equivalent appropriate to vessel class.  | 6.7          |

| Environmental Performance Objective  | Control Measure   | Environmental Performance Standard  | Measurement Criteria  | EP Reference |
|--|---|---|---|--------------|
|  | CM21: Discharge criteria of oily water separator                            | <p>For vessels (as appropriate to class), treated oily water discharge permitted if:</p> <ul style="list-style-type: none"> <li>• Vessel is proceeding en-route</li> <li>• Treatment is via a MARPOL-compliant OWS;</li> <li>• The discharged oil-in-water (OIW) content is &lt; 15 ppm;</li> <li>• Oil Detection Monitoring Equipment (ODME) and control equipment are operating.</li> </ul>   | <p>Records demonstrate:</p> <ul style="list-style-type: none"> <li>• Availability of OWS and ODME.</li> <li>• Vessel Oil Record Book verifies all discharges meet &lt;15 ppm OIW</li> <li>• Planned Maintenance System (PMS) records confirm OWS and ODME are routinely maintained and calibrated in accordance with PMS schedule.</li> <li>• Vessel Oil Record Book verifies residual oil transferred to shore.</li> </ul> | 6.7, 8.5.3.1 |
| E15: No unplanned overboard release of solid waste or hazardous waste overboard. | CM18: Compliance with MARPOL Annex V - prevention of pollution from garbage | <p>TGPPL to verify the vessel has:</p> <ul style="list-style-type: none"> <li>• A Garbage Management Plan in accordance with MARPOL Annex V.</li> <li>• - A Garbage Record Book / log in accordance with MARPOL Annex V.</li> </ul>   | Records demonstrate that the vessel is in compliance with MARPOL V and has a Garbage Management Plan and Garbage Record Book in place and it is maintained.   | 6.7          |
|  | CM22: Waste handling and storage procedures                                 | <p>Handling of solid and hazardous wastes on-board will comply with the requirements of MARPOL Annex V including:</p> <ul style="list-style-type: none"> <li>• All solid and hazardous wastes generated at sea during the activity will be retained on the vessel and disposed of onshore (excluding bilge water / deck drainage, food waste and sewage).</li> <li>• All waste material that could reasonably be lost overboard is stored securely (e.g. lidded bins).</li> </ul> | <p>Garbage Record Book verifies solid and hazardous waste transferred to shore for disposal</p> <p>Inspection verifies that waste is stored and handled according to its waste classification and</p>   | 6.7          |

| Environmental Performance Objective                                 | Control Measure                                | Environmental Performance Standard   | Measurement Criteria   | EP Reference |
|---|--|--|--|--------------|
|   |  | <ul style="list-style-type: none"> <li>All wastes including hazardous wastes and chemicals will be segregated into clearly marked containers.</li> <li>Any liquid waste storage on deck must have at least one barrier (i.e. bunding) to prevent leakage or spillage entering the marine environment.</li> </ul> | waste receptacles are properly located, sized, labelled, covered and secured for the waste they hold.                  |              |
| E16: No unplanned overboard release of chemicals or hydraulic oil.  | CM24: ROV operating procedures                 | ROV operations conducted in accordance with IMCA R 004 'Code of Practice for the safe and efficient operation of Remotely Operated Vehicles'.  | Records verify ROV operations are conducted in accordance with IMCA R 004.   | 6.8          |
|   | CM25: Planned maintenance system (PMS) - ROV   | Maintenance of ROV hydraulic hoses and grout hoses in accordance with vessel PMS schedule.   | PMS records verify ROV hydraulic hoses and grout hoses maintained in accordance with schedule.                         | 6.8          |
|   | CM26: Chemical storage and handling procedures | Hydraulic oils, lubricants and chemicals stored and, where practicable, handled within containment facilities, designed in accordance with relevant Australian / international codes and standards, to prevent the release of spilt substances to the marine environment.  | Inspection records confirm liquid chemicals stored within secondary containment.                                       | 6.8          |
|   | CM44: Grouting procedure                       | Grouting equipment will be operated and maintained in accordance with approved procedures to minimise release into the marine environment.   | Records verify grouting equipment is operated in accordance with operating equipment.                                  | 6.8          |
|   | CM45: ROV IMCA Audit                           | Prior to chartering an ROV, ensure that the ROV has an International Marine Contractors Association (IMCA) survey report to demonstrate the ROV is operationally ready.  | Evidence of a current IMCA Audit report  | 6.8          |
| E17: Minimise the impact on the environment from a chemical release | CM28: Chemical selection process               | Planned chemical discharges will be assessed and approved prior to use. All chemicals planned for discharge to meet CHARM silver or gold or non-CHARM D or E.  | Chemical inventory records show all chemicals planned for discharge are rated CHARM silver or gold or non-CHARM D or E | 6.8          |

| Environmental Performance Objective           | Control Measure                                       | Environmental Performance Standard  | Measurement Criteria  | EP Reference |
|---|---|---|---|--------------|
| E18: No introduction and establishment of IMS | CM29: Ballast Water Management Plan and Certificate   | <p>Before commencing activities, the vessel shall have</p> <ul style="list-style-type: none"> <li>Ballast Water Management Plan that meets the IMO Ballast Water Management Convention - Guidelines for Ballast Water Management and Development of Ballast Water Management Plans</li> <li>Ballast Water Management Certificate approved in accordance with Regulation E1 of the Ballast Water Convention.</li> <li>Demonstrated compliance with the Australian Ballast Water Management Requirements (DAWE, 2020).</li> <li>Vessel Master to adhere to Australian Ballast Water Management (ABWM) requirements for ballast water exchange.</li> </ul> | Vessel has an approved Ballast Water Management Plan and Ballast Water Management Certificate<br>Ballast water records show location of ballast water uptake and discharge. | 6.9          |
|   | CM30: Ballast Water Record System                     | <p>A Ballast Water Record System will be maintained in accordance with Regulation B-2 of the Annex to the IMO Ballast Water Management Convention including:</p> <ul style="list-style-type: none"> <li>start and finish coordinates</li> <li>actual pumping times</li> <li>residual volume remaining in the tank at the end the empty cycle prior to refill (empty refill method only)</li> </ul>  | Ballast water records are current.  | 6.9          |
|   | CM31: Biosecurity clearance when entering Australia   | Where applicable (if the vessel has mobilised from outside Australian waters), the vessel will submit detailed pre-arrival information to the DAFF, via the Maritime Arrivals Reporting System (MARS), no later than 12 hours prior to arrival in Australian waters.  | Records confirm DAFF clearance obtained if vessel is arriving in Australian territory from a foreign port or is under biosecurity control.                                  | 6.9          |
|   | CM32: Biofouling management records                   | Biofouling records maintained in accordance with IMO Guidelines for the Control and Management of Ships' Biofouling to Minimise the Transfer of Invasive Aquatic Species.   | Records verify that biofouling records are prepared and maintained.   | 6.9          |
|   | CM33: Invasive Marine Species risk assessment process | Biofouling risk assessment conducted in accordance to vessel process that complies with National Biofouling Management Guidance for the Petroleum Production and Exploration Industry and 2023 Guidelines for the Control and Management of Ships'  | Biofouling risk assessment record confirms vessel poses low risk of introducing IMS   | 6.9          |

| Environmental Performance Objective   | Control Measure                                 | Environmental Performance Standard  | Measurement Criteria   | EP Reference       |
|---|---|---|--|--------------------|
|   |   | Biofouling to Minimise the Transfer of Invasive Aquatic Species (Biofouling Guidelines shows low risk).   |  |                    |
|   | CM34: Immersible retrievable equipment cleaning | All immersible retrievable - equipment has been cleaned and / or inspected in accordance with National Biofouling Management Guidance for the Petroleum Production and Exploration Industry prior to commencement of the activity.  | Records document cleaning and / or inspection of immersible retrievable - equipment.   | 6.9                |
| E19: Response to any unplanned release of chemicals, hydraulic oil or hydrocarbons is timely and effective<br><br>E20: No unplanned release of hydrocarbons to the marine environment | CM27: SOPEP (or equivalent)                     | Vessels must have a current SOPEP (or equivalent) that complies with MARPOL Annex I, that details: <ul style="list-style-type: none"> <li>• response equipment available to control a spill event</li> <li>• review cycle to ensure that the SOPEP is kept up to date</li> <li>• testing requirements, including the frequency and nature of these tests.</li> <li>• reporting requirements and a list of authorities to be contacted</li> <li>• activities to be undertaken to control the release</li> <li>• procedures for coordinating with local authorities.</li> </ul> | Inspection records confirm the vessel has a current SOPEP, response equipment (i.e. spill kits) is available and that testing requirements are undertaken in accordance to the SOPEP<br>Records confirm spill training is undertaken in accordance with SOPEP. | 6.8, 6.10          |
|   | CM36: OPEP                                      | In the event of a spill emergency response, activities will be implemented in accordance with the OPEP (refer to Section 9.4 of the EP).  | Records confirm that emergency response activities have been implemented in accordance with the OPEP.  | 6.10, 6.11, 9.4.10 |
|   | CM37: OSMP                                      | Operational and scientific monitoring will be implemented in accordance with the OSMP (refer to Section 9.4.9 of the EP)  | Records confirm that operational and scientific monitoring have been implemented in accordance with the OSMP.  | 6.10, 6.11, 9.4.10 |

| Environmental Performance Objective  | Control Measure  | Environmental Performance Standard   | Measurement Criteria  | EP Reference    |
|--|--|--|---|-----------------|
|  | CM55: Arrangements supporting the OPEP will be tested to ensure the OPEP can be implemented as planned | <ul style="list-style-type: none"> <li>Exercises / tests will be conducted in alignment with the frequency identified in Table 9-2.</li> <li>A minimum level of trained personnel for core roles in the OPEP are maintained in accordance with Section 9.3 of the EP</li> </ul>  | <p>Testing arrangement records confirm that emergency response capability has been maintained.</p> <p>Records confirm a minimum level of personnel trained for core OPEP roles are available.</p> | 6.10, 6.11, 9.3 |
| <p>E20: No unplanned release of hydrocarbons to the marine environment</p> <p>E20a: To minimise the potential for, and mitigate the consequences of, pipeline failure and LOC due to dragged anchors and dropped objects</p> | CM38: Accepted TGP operations Safety Case in place   | <p>TGP to operate in accordance with a NOPSEMA-accepted Safety Case. This framework contributes to management of associated potential environmental consequences of major accident events (MAE), including operating integrity, isolations, and emergency arrangements. The Safety Case includes:</p> <ul style="list-style-type: none"> <li>Identification of: <ul style="list-style-type: none"> <li>Potential pathways and</li> <li>Response measures for major accident events from the pipeline</li> </ul> </li> <li>Identification of critical controls (both preventative and mitigative) for each MAE</li> <li>Development of performance standards for each critical control</li> </ul> | Records confirm a NOPSEMA-accepted safety case is in place for the pipeline operations and the pipeline is operated in complied with the safety case.   | 6.11            |
|  | CM58: Continuous monitoring of pipeline  | 24 hour, 7 days a week SCADA monitoring of the gas transport (including pressure, flow and temperature) within the pipeline and periodic verification of SCADA alarm set points to the Offshore Pipeline Operations and Maintenance Schedule.  | <p>Control Room audit compliance reports.</p> <p>Training and competency assessment records for Control Room Personnel.</p> <p>Records of routine operator tests of MLV closure times</p>         | 6.11            |
|  | CM59: Routine inspections of the subsea pipeline   | Inspection, maintenance and review (IMR) activities to include inspection of the offshore pipeline to identify and record any pipeline damage, dropped objects or dislocation / excessive free spans caused by dragged objects / fishing equipment. Any areas of   | Offshore pipeline survey reports.   | 6.11            |

| Environmental Performance Objective   | Control Measure  | Environmental Performance Standard   | Measurement Criteria  | EP Reference |
|---|--|--|---|--------------|
|   |  | <p>pipeline damage are to be repaired or subject to more frequent inspection as outlined in the:</p> <ul style="list-style-type: none"> <li>TGP Offshore Operations and Maintenance Management Plan</li> <li>TGP Offshore Pipeline Operations and Maintenance Schedule</li> </ul> <p>TGP Offshore Pipeline Integrity Management Plan</p> | <p>Offshore pipeline maintenance records (if pipeline repair required)</p> <p>Annual integrity review and risk assessment reports as detailed in the Offshore Safety Case</p> |              |
| E21: EP is being effectively implemented and remains fit for purpose  | CM54: Audit program  | Audit, review and management of non-conformances is undertaken via the TGP audit process outlined in Section 8.5   | Audits completed in accordance with audit schedule, and any non-conformances identified are tracked to close out.   | 8.5          |
| E22: Monitoring and reporting of emissions, discharges provide effective oversight of petroleum activities by TGPPL | CM56: Monitoring and reporting of emissions, discharges, and environmental incidents | TGPPL will collect monitoring data of discharges and emissions in accordance with Table 8-2 of the EP  | Incident reports and Annual Environmental Performance Report documents any emissions or discharges made during TGP activities.  | 8.5.4<br>8.6 |

Note: <sup>1</sup> National Recovery Plan for Southern Right Whale  
<sup>2</sup> Conservation Management Plan for the Blue Whale  
<sup>3</sup> National Light Pollution Guidelines for Wildlife  
<sup>4</sup> National Recovery Plan for Albatrosses and Petrels  
<sup>5</sup> Recovery Plan for Marine Turtles in Australia