

# Chapter 25

# Environmental Management Framework



This chapter presents the Environmental Management Framework (EMF) for the Gas Import Jetty and Pipeline Project (the Project) in response to Section 5 of the EES scoping requirements. The purpose of the EMF is to clarify how the management of potential environmental impacts of the Project that have been identified in this EES will be captured within the statutory approvals and consents that are required.

## 25.1 Overview

The objectives of the EMF are to:

- set out the mitigation measures developed in this EES to avoid, minimise or offset potential environmental, social and safety impacts and identify the relevant statutory approvals and consents that would give effect to these measures
- ensure clear accountabilities are identified for implementing the environmental management requirements of the Project and monitoring the implementation of the statutory approval conditions.

Development of this EMF was guided by the EES scoping requirements, relevant legislation, policy and guidelines including the statutory approvals and consents that would be required. The EMF and associated mitigation measures have been informed by the environmental risk assessments and specialist studies completed for the EES.

The EMF outlines the relevant statutory approvals and consents required for the Project and how the mitigation measures would be incorporated within the approval conditions or within Environmental Management Plans to be approved pursuant to statutory approvals. AGL and APA would use the EMF, statutory approvals and consents and any associated environmental management plans to implement the mitigation measures and would monitor the implementation of the statutory approval conditions.

The mitigation measures outlined in the EMF have been developed in this EES to avoid and minimise adverse environmental effects. The relevant statutory approval or consent that would give effect to the management and monitoring potential effects are outlined in **Section 25.5** (Statutory approvals and consents). Environmental Management Plans (EMPs) would be prepared to incorporate the mitigation measures and these would be approved and enforced pursuant to the relevant statutory approval.

EMPs required under statutory approvals and consents would be subject to updates by AGL and APA to ensure commitments are incorporated and adhered to. Implementation of the approach outlined in this EMF and the subsequent statutory obligations would be effective in controlling adverse effects associated with development and operation of the Project and would support achievement of the Project objectives. They also provide a clear, transparent, robust and comprehensive approach to organisational responsibility and accountability arrangements.

## 25.2 EES scoping requirements

Section 5 of the EES scoping requirements establishes the requirement for an EMF to be prepared for the Project:

**The proponent needs to provide a transparent environmental management framework (EMF) for the project in the EES with clear accountabilities for managing and monitoring environmental effects and hazards associated with construction, operation, and site reinstatement phases of the project to achieve acceptable environmental outcomes.**

**Table 25-1** outlines the EES scoping requirements for the EMF along with the relevant section within this chapter where these requirements are addressed.

**Table 25-1:** EES scoping requirements for the Environmental Management Framework

EES Scoping Requirement	Relevant section in this chapter
The context of required approvals and consents, including any anticipated requirements for related environmental management plans, whether for project phases or elements.	<b>Section 25.5</b>
The proposed environmental management system to be adopted.	<b>Section 25.8</b>
Organisational responsibilities and accountabilities for environmental management.	<b>Section 25.4</b>
A register of environmental risks associated with the project which is to be maintained during project implementation (including matters identified in preceding sections in these directions as well as other pertinent risks).	An environmental risk register has been prepared as part of the EES (see Attachment III <i>Environmental risk report</i> ).
The environmental management measures proposed to address specific issues, including commitments to mitigate adverse effects and enhance environmental outcomes.	<b>Section 25.7</b>
Contingency measures for response to environmental risks, should they eventuate.	<b>Section 25.10</b>
The proposed objectives, indicators and monitoring requirements, including for managing or addressing: <ul style="list-style-type: none"> <li>• social outcomes and community engagement</li> <li>• safety outcomes</li> <li>• biodiversity values, including offsets</li> <li>• maintenance of the ecological character of the Western Port Ramsar site</li> <li>• groundwater and surface water quality, surface water flow and groundwater regimes</li> <li>• solid and liquid waste, including recycling and handling of potentially hazardous or contaminated waste, PASS and other excavated spoil</li> <li>• noise, vibration, and emissions to air, including dust and greenhouse gases</li> <li>• Aboriginal and historic cultural heritage values</li> <li>• traffic during construction, including managing temporary disruption and changed accessibility</li> <li>• disruption of and hazards to existing infrastructure</li> <li>• maintenance of landscape values</li> <li>• site reinstatement, including handling of topsoil</li> <li>• emergency management.</li> </ul>	<b>Section 25.7 and 25.8.2</b>
Arrangements for management of and access to baseline and monitoring data, to ensure the transparency and accountability of environmental management and to contribute to the improvement of environmental knowledge.	<b>Section 25.8.5</b>
The procedures for monitoring compliance with approvals conditions and other committed environmental management measures and review of the effectiveness of the environmental management framework for continuous improvement.	<b>Section 25.8.3</b>
Procedures for auditing and reporting of performance including compliance with statutory conditions and standards.	<b>Section 25.8.4</b>

## 25.3 Regulatory and compliance framework

The Project would be delivered within the context of the EMF and in accordance with the obligations and requirements of the statutory approvals and consents. The regulatory and compliance framework outlined in this section would apply across the Project lifecycle, from assessment and approvals to construction and operation.

The Minister for Planning will publish an EES Assessment Report and provide a copy to AGL and APA and all decision makers responsible for issuing approvals for the Project. Decision makers will consider the EES Assessment Report and make determinations on the various approvals including any conditions that may be recommended in the EES Assessment Report.

Before the commencement of each Project phase (construction and operation), it is the responsibility of AGL and APA to obtain any further statutory approvals or secondary consents (ie approvals of management plans that are required by conditions of consent).

APA and AGL would engage contractors for the construction and operation of the Project. Tender documentation used for the appointment of contractors would require that contractors demonstrate compliance with all requirements specified in the relevant statutory approvals and consents. Contractors would be responsible for reporting compliance with statutory approvals conditions to AGL and APA. AGL and APA would be responsible for reporting compliance to all regulators as required.

AGL and APA would be required to develop, implement and maintain Environmental Management Plans for both the construction and operation of the Project, that meet the requirements of the statutory approvals and consents.

APA would develop a Construction Environmental Management Plan (CEMP) for the construction of the Pipeline Works, and AGL would develop an Environmental Management Plan (EMP) for construction of the Gas Import Jetty Works.

To give effect to the statutory approvals and consents, Operational Environmental Management Plans (OEMPs) would be prepared by AGL and APA for the operational phases of the Pipeline Works and Gas Import Jetty Works.

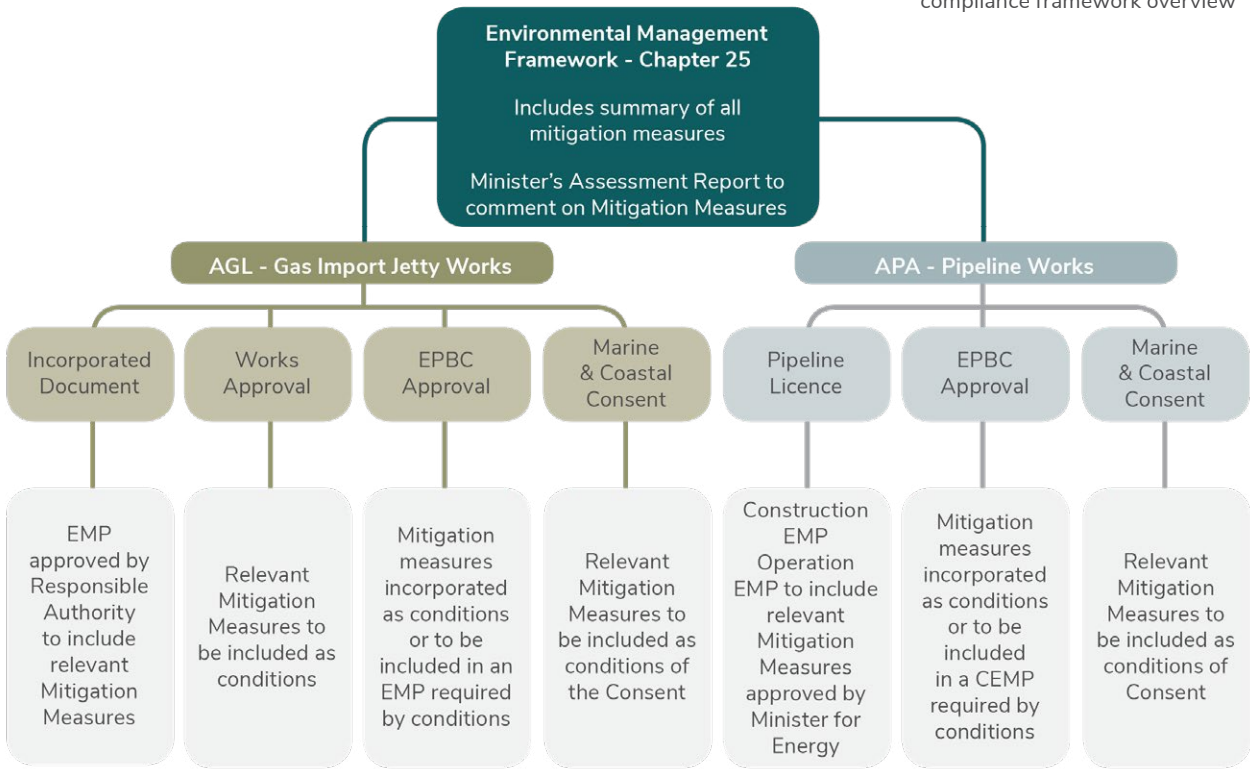
AGL and APA's EMP, CEMP and OEMPs would include the procedures for monitoring compliance with approval conditions and other committed environmental management measures and would include procedures to review the effectiveness of the EMF for continuous improvement.

Contractors would be required to prepare their own environmental management plans that comply with AGL and APA's CEMP, EMP and OEMP. Contractor management plans would be reviewed by AGL and APA to ensure that the obligations and requirements of relevant statutory approvals can be achieved, prior to approval being sought from the relevant statutory authority.

Approval of contractor environmental management plans would be required from the relevant statutory authority associated with the statutory approval. The roles and responsibilities of relevant statutory authorities are set out in **Table 25-2** in the next section (**Section 25.4 Roles and responsibilities**). The relevant statutory approvals and consents are set out in **Table 25-3** (**Section 25.5 Statutory approvals and consents**).

An overview of the regulatory and compliance framework for the Project is presented in **Figure 25-1**.

▼ **Figure 25-1:** Regulatory and compliance framework overview



## 25.4 Roles and responsibilities

AGL and APA would be responsible for:

- overseeing and engaging the contractors and consultants required for the detailed Project design
- site investigations
- obtaining secondary approvals
- procurement
- construction delivery
- commissioning and operation of the Project.

AGL and APA would also be responsible for supervising the contractor(s) and ensuring that Project delivery complies with relevant statutory approvals. It would be the responsibility of AGL and APA to also report compliance and/or environmental management performance to all relevant regulators as necessary under each approval or relevant statutory instrument.

AGL and APA would each have responsibility for their element of the Project (AGL for the Gas Import Jetty Works and APA for the Pipeline Works) and for ensuring that all statutory requirements are met.

The roles and responsibilities of the key stakeholders relevant to environmental management of the Project are outlined in **Table 25-2**.

**Table 25-2:** Project roles and responsibilities

Stakeholder	Role	Responsibility
Government representatives including EPA Minister for Planning, Energy Safe Victoria, WorkSafe, Aboriginal Victoria and Minister for Energy, Environment and Climate Change	Regulators	<ul style="list-style-type: none"> <li>• Incorporate mitigation measures as statutory approvals conditions or require that they be included in EMPs to be prepared and approved under the approval conditions.</li> <li>• Administer and enforce statutory approvals</li> <li>• Review and approve, where necessary, relevant environmental management plans</li> <li>• Receive and review audit reports from the Independent Environmental Auditor(s), in compliance with relevant approval conditions where required.</li> </ul>
Victorian Minister for Planning	Regulator	<ul style="list-style-type: none"> <li>• Review the EMF and mitigation measures in the EES, and recommend adoption by relevant regulatory agencies in statutory approvals as part of the Minister for Planning's assessment of the EES.</li> <li>• Approve the planning scheme amendment and conditions of the Gas Import Jetty Works Incorporated Document</li> <li>• Review and approve EMPs required under the Gas Import Jetty Works Incorporated Document</li> <li>• Where relevant, administer and enforce approved environmental management plans as responsible authority for the administration and enforcement of the Incorporated Document through the Planning Scheme Amendment.</li> </ul>
Commonwealth Minister for Environment	Regulator	<ul style="list-style-type: none"> <li>• Administer and enforce the EPBC Approvals for each of the Pipeline Works and the Gas Import Jetty Works</li> <li>• Review and approve environmental management plans as required under the relevant EPBC approvals</li> <li>• Administer and enforce environmental management plans and strategies approved pursuant to those approvals.</li> <li>• Receive audit or monitoring reports as required.</li> </ul>

Stakeholder	Role	Responsibility
Bunurong Land Council Aboriginal Corporation	Regulator	<ul style="list-style-type: none"> <li>Evaluate and approve CHMP 15383 Crib Point to Pakenham Gas Pipeline as the Registered Aboriginal Party</li> </ul>
AGL and APA	Proponent	<ul style="list-style-type: none"> <li>Obtain applicable statutory approvals for the Gas Import Jetty Works (AGL) and the Pipeline Works (APA)</li> <li>Prepare an EMP, CEMP and OEMP in accordance with proponent tender documents incorporating mitigation measures and other relevant legislative requirements, and approval conditions</li> <li>Develop contractor tender documentation, reflecting requirements from approval conditions and clearly articulating requirement for incorporation of EMP compliance into tender responses</li> <li>Review and approve contractor environmental management plans prior to being submitted to statutory authorities for approval pursuant to relevant statutory approvals</li> <li>Monitor contractor's compliance with approved mitigation measures and approvals conditions, as outlined in the approved EMP, CEMP and OEMPs and take corrective action where required</li> <li>AGL and APA would be responsible for compliance and/or environmental management performance, compliance with statutory approvals and associated reporting to all regulators as required.</li> </ul>
Project Contractors and Consultants	Proponent appointed for detailed Project design, site investigations, obtaining secondary approvals, procurement, construction delivery and commissioning of the Project	<ul style="list-style-type: none"> <li>Project contractors to prepare management plans in accordance with AGL and APA tender documents, EMPs, CEMPs and OEMPs and other relevant legislative requirements, and approval conditions that have been obtained by AGL and APA</li> <li>Ensure compliance with approved EMPs, CEMPs and OEMPs during Project delivery and take corrective action where required.</li> <li>Contractors would be responsible for reporting compliance with approved EMPs, CEMPs and OEMPs and statutory approvals conditions to AGL and APA.</li> <li>Consultants may be responsible for obtaining secondary approvals on behalf of AGL and APA where required</li> </ul>
Independent Environmental Auditor(s) (IEA)	Proponent appointed independent for review and verification	<ul style="list-style-type: none"> <li>Prior to commencement of work, assess contractor's management plans for adequacy in compliance with statutory approvals</li> <li>Conduct audits of contractors' construction works and operations, at agreed intervals, to assess compliance with EMPs, CEMPs and OEMPs</li> <li>Prepare audit reports for AGL and APA, and recommend corrective and preventive actions as required</li> <li>Submit relevant audit reports to the applicable regulator(s), as applicable</li> <li>The IEA must include persons with expertise, based on qualifications and experience, appropriate to allow the roles specified for the IEA in the EMF to be properly carried out.</li> </ul>



## 25.5 Statutory approvals and consents

This section provides an overview of the regulatory framework that would apply for the Project to proceed. Further information on the regulatory framework for the Project is provided in **Chapter 5** Key approvals and assessment framework. AGL and APA must obtain a number of statutory approvals as part of the regulatory approval processes. **Table 25-3** and **Figure 25-2** outline the approvals and consents required for the Gas Import Jetty Works and the Pipeline Works.

It should be noted that an EES in Victoria under the *Environment Effects Act 1978* is not a statutory approval. Rather, the Minister's assessment of the Project's environmental effects (in the form of the Minister's Assessment Report of the EES) is to inform statutory decision-makers in their assessment of the relevant regulatory approval applications, which cannot be approved until the Minister's assessment has been made.

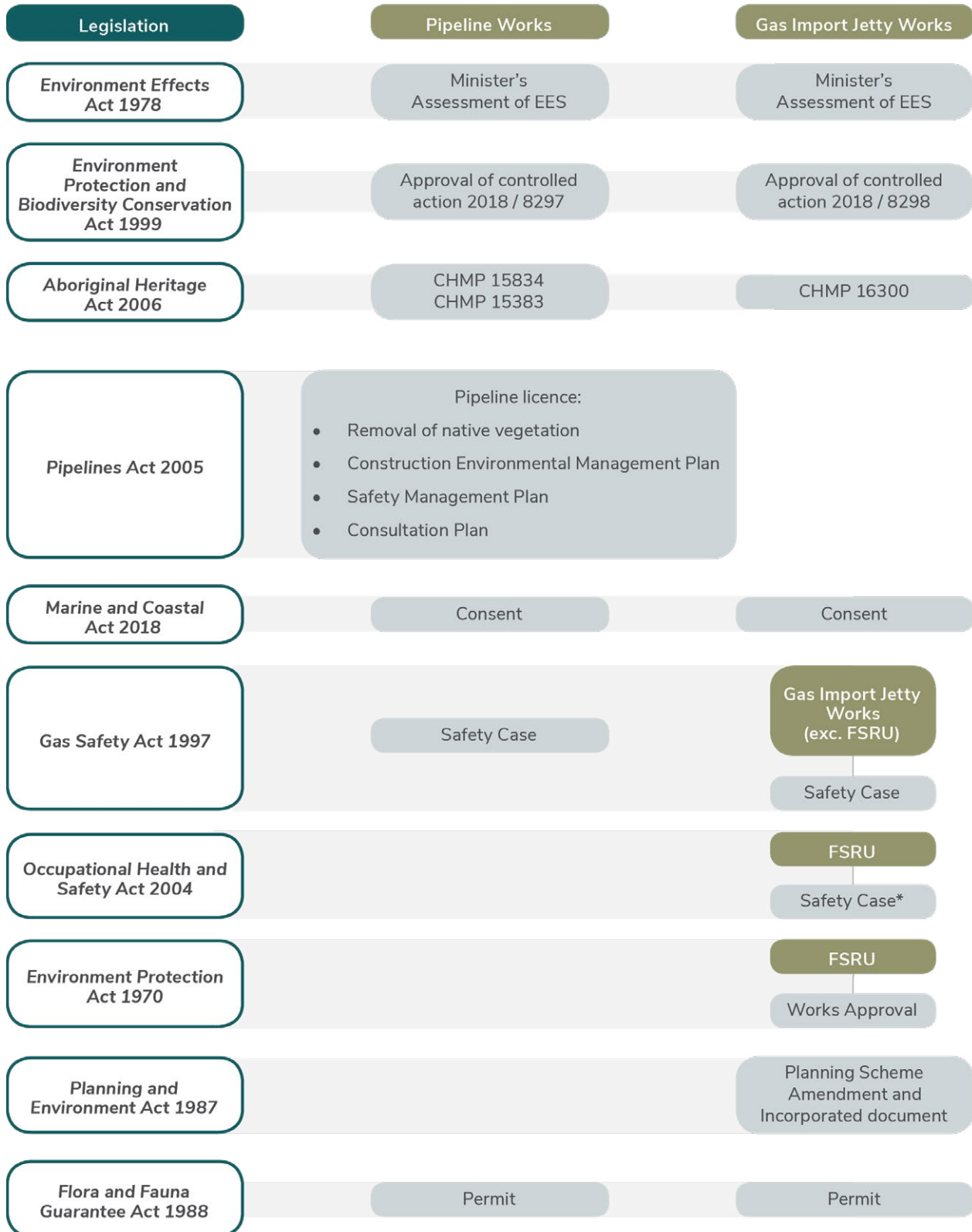
**Table 25-3:** Statutory approvals and consents

Legislation	Statutory approval authority	Statutory approval	
		AGL/Gas Import Jetty Works	APA/Pipeline Works
Aboriginal Heritage Act 2006 (Vic)	Aboriginal Victoria (AV) and relevant Registered Aboriginal Party (RAP)	Cultural Heritage Management Plan - CHMP 16300	Cultural Heritage Management Plans - CHMP 15834 and CHMP 15383
Environment Protection and Biodiversity Conservation Act 1999 (Cth)	Commonwealth Minister for Environment and Energy	Approval for the Gas Import Jetty Works controlled action	Approval for the Pipeline Works controlled action
Pipelines Act 2005 (Vic)	Minister for Energy, Environment and Climate Change Energy Safe Victoria	Not applicable	Licence for pipeline construction and operation including: <ul style="list-style-type: none"> <li>Construction Environmental Management Plan (CEMP) including removal of native vegetation (offsets)</li> <li>Safety Management Plan (SMP)</li> <li>Consultation Plan</li> </ul>
Environment Protection Act 1970 (Vic)	Environment Protection Authority	Works Approval and EPA licence for operation of the scheduled premise – FSRU only	Not applicable
Marine and Coastal Act 2018 (Vic)	Minister for Energy, Environment and Climate Change	Consent for Gas Import Jetty Works on Crown land.	Consent for works on Crown land as covered by the Act, where the pipeline crosses Warringine Park and Watson Creek.

Legislation	Statutory approval authority	Statutory approval	
		AGL/Gas Import Jetty Works	APA/Pipeline Works
Planning and Environment Act 1987 (Vic)	Minister for Planning	<p>Planning scheme amendment to the Mornington Peninsula Planning Scheme to:</p> <ul style="list-style-type: none"> <li>• Apply the Specific Controls Overlay to allow the use and development of land for the Gas Import Jetty Works (including the FSRU) in accordance with the specific control in the Planning Scheme</li> <li>• Amend the Schedule to Clause 45.12 (Specific Controls Overlay) and Clause 72.04 to insert an Incorporated Document enabling the use and development of the land for an LNG Import Facility</li> <li>• Rezone the northern portion of Crown Allotment 2040 that is currently included in the Public Conservation and Resource Zone to include it in the Port Zone, and extend the Port Zone out to the municipal boundary around the Crib Point Jetty</li> <li>• Make the Minister for Planning the responsible authority for the Gas Import Jetty Works.</li> </ul> <p>It is anticipated that an Incorporated Document would include (but not be limited to) requirements for:</p> <ul style="list-style-type: none"> <li>• Development plans to be submitted for approval prior to the commencement of works.</li> <li>• An environmental management plan which would include mitigation measures to manage potential environmental and amenity impacts from the Gas Import Jetty Works. The environmental management plan for the Gas Import Jetty Works would require the preparation of a Gas Import Jetty Works Construction and Environmental Management Plan (CEMP) and Gas Import Jetty Works Operations Environmental Management Plan (OEMP) and other plans and procedures required by the mitigation measures</li> <li>• Native vegetation removal offsets and associated management plan for native vegetation removal associated with the Gas Import Jetty Works.</li> <li>• Ongoing requirements for environmental monitoring and reporting for facilities associated with the Gas Import Jetty Works.</li> </ul>	Not applicable - Pipeline Works exempt from Planning and Environment Act 1987 by s 85 of the Pipelines Act 2005
Gas Safety Act 1997 (Vic)	Energy Safe Victoria (ESV)	Safety case for Gas Import Jetty Works (excluding FSRU)	Safety case for Crib Point to Pakenham Pipeline
Occupational Health and Safety Act 2004 (Vic)	WorkSafe	Safety case for the FSRU is not currently required by the Occupational Health and Safety Act 2004. However, a safety case is being prepared in line with Major Hazard Facility requirements if this Act is applied to the FSRU <sup>1</sup> .	Not applicable
Flora and Fauna Guarantee Act 1998 (Vic)	Minister for Energy, Environment and Climate Change	A permit may be required for the 'taking' of fish by the FSRU water intake process	Permit required for vegetation clearance of FFG Act-listed species on public land at several locations along the pipeline alignment

<sup>1</sup> Note that the FSRU is currently not classified as a Major Hazard Facility (MHF) under the OHS Act. However, AGL will submit a safety case that is consistent with MHF requirements to WorkSafe Victoria for approval as if the FSRU was an MHF.



▼ **Figure 25-2:** Statutory approvals and consents required for the Project to proceed

\*Note that the FSRU is currently not classified as a Major Hazard Facility (MHF) under the OHS Act. However, AGL would submit a safety case that is consistent with MHF requirements to WorkSafe Victoria for approval as if the FSRU was an MHF.

## 25.6 Risk and impact assessments

Environmental risks and potential impacts associated with the Project have been identified and assessed through the specialist investigations undertaken for the EES. As part of the preparation of the EES, an environmental risk register was developed to assist in identifying management measures and measuring their ability to produce the desired outcome (see Attachment III *Environmental risk report*). In addition, environmental assessments have considered stakeholder feedback that has been provided via a range of engagement activities (see **Chapter 26 Stakeholder engagement**).

The mitigation measures outlined in **Section 25.7** have been developed throughout the risk assessment process with the intent of minimising potential environmental, social and safety impacts so that these impacts are avoided, minimised and offset as required.

## 25.7 Mitigation measures

The Project would be delivered in accordance with the mitigation measures that represent the environmental commitments made by AGL and APA and in conformance with statutory obligations.

Mitigation measures were recommended by technical specialists in order to avoid, minimise or offset potential environmental, social and safety impacts. AGL and APA have reviewed the recommended mitigation measures in the EES technical studies and has adopted a comprehensive set of measures to manage potential impacts from the Project.

The mitigation measures for the Project are outlined in **Table 25-4** and are to provide controls on Project activities that may impact on and give rise to risks for the following subject areas:

- Marine biodiversity
- Terrestrial and freshwater biodiversity
- Surface water
- Groundwater
- Contamination and acid sulfate soils
- Greenhouse gas
- Air quality
- Noise and vibration
- Safety, hazard and risk
- Landscape and visual
- Traffic
- Land use
- Social
- Business
- Agriculture
- Aboriginal cultural heritage
- Historic heritage.

Table 25-4: Mitigation Measures

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
<b>Aboriginal cultural heritage</b>					
<b>EES evaluation objective: To avoid or minimise adverse effects on Aboriginal and historic cultural heritage.</b>					
MM-AH01	Implement and comply with the Cultural Heritage Management Plans (CHMPs 15383, 15384 and 16300) management conditions.	Gas Import Jetty Works and Pipeline Works	CHMP	Construction	ACH1, ACH2, ACH3, ACH4, ACH5, ACH6
MM-AH02	Construction areas will be demarcated with survey pegs, fencing or other means, to ensure works are limited to the approved CHMP Activity Areas.	Gas Import Jetty Works and Pipeline Works	CHMP	Construction	ACH4
<b>Agriculture</b>					
<b>EES evaluation objective: To minimise potential adverse social, economic, amenity and land use effects, including impacts on existing public facilities, social values, businesses, land uses, open space and other landscape values.</b>					
MM-AG01	<b>Landholder and occupier consultation</b> Consultation to be undertaken prior to the commencement of construction with relevant landholders and occupiers regarding property-specific measures to implement during construction and operations including: a. Access across the ROW during construction b. Stock management c. Management of overland flow d. Biosecurity e. Relocation / duplication of facilities and infrastructure	Pipeline Works	Pipeline Licence	Design, construction and operation	AG1, AG2, AG3, AG6
MM-AG02	<b>Alternative access arrangements</b> Where practical and desirable, suitable arrangements will be made with landholders to exclude or manage stock access during construction and to recently reinstated areas.	Pipeline Works	Pipeline Licence	Construction	AG2, AG3
MM-AG03	<b>Compensation for affected parties</b> Compensation will be agreed and paid to directly affected landholders for the acquisition of the easement as required under the <i>Pipelines Act 2005</i> voluntary process or the <i>Land Acquisition and Compensation Act 1986</i> where agreement cannot be reached.	Pipeline Works	Pipeline Licence	Design, construction and operation	AG1, AG2, AG6, LU3, LU4
MM-AG04	<b>Identification of third-party services</b> All third-party services within the easement, including on farm infrastructure, will be identified and marked on the ground in advance of trenching activities.	Pipeline Works	Pipeline Licence	Design and construction	AG4
MM-AG05	<b>Management of third party services</b> All identified third party services to be managed so that their operation can continue during pipeline construction, wherever practicable.	Pipeline Works	Pipeline Licence	Construction	AG4
MM-AG06	<b>Crossing water infrastructure</b> Methods and timing of construction for the crossings of water transfer infrastructure to be agreed with relevant landholders and/or operators of the infrastructure prior to any works commencing on the property.	Pipeline Works	Pipeline Licence	Design and Construction	AG4

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-AG07	<b>Biosecurity management</b> Biosecurity environmental standards will be developed for the construction phase of the Project in accordance with the <i>Catchment and Land Protection Act 1994</i> .	Pipeline Works	Pipeline Licence	Design and construction	AG5
MM-AG08	<b>Imported topsoil of appropriate quality</b> Any topsoil imported for easement maintenance will be of an appropriate quality and agreed with the landholder.	Pipeline Works	Pipeline Licence	Construction and Operation	AG5
MM-RH01	<b>Progressive reinstatement</b> Reinstatement will commence progressively post construction and will be undertaken as soon as practicable. Appropriate reinstatement methods will include: a. An excavation method that enables the segregation of topsoil and subsoil so that replacement can be in the same order. b. A specific rehabilitation method for each soil association, based on soil testing of the different soil associations to determine their nutrient and physical characteristics.	Pipeline Works	Pipeline Licence	Construction and operation	AG7
MM-RH02	<b>Reinstatement of existing topography</b> The construction footprint will be re-profiled to original contours or to new, stable contours where it is not reasonably practical to re-profile to original contour.	Pipeline Works	Pipeline Licence	Construction and operation	AG7
MM-RH03	<b>Soil amelioration</b> Soil amelioration and fertiliser will be applied where required as determined by post construction assessments and in consultation with the landholder.	Pipeline Works	Pipeline Licence	Construction and operation	AG7
MM-RH04	<b>Seeding for revegetation and soil stabilisation</b> Where seeding is adopted to facilitate prompt revegetation and soil stabilisation, the following principles will be considered: a. Seed mixtures to be formulated with consideration of the vegetation composition of the areas adjacent to the construction footprint and in consultation with the relevant landholder. Only certified seed to be used. b. Sterile seed stock (cover crop) may be used to provide short term surface stability. c. Seed to be evenly dispersed over the disturbed area. d. Seeding to take place as soon as practicable after reinstatement of the soil profile.	Pipeline Works	Pipeline Licence	Construction and operation	AG7
MM-RH05	<b>Monitoring disturbed areas</b> Monitoring of the condition of the ROW and other disturbed areas will be completed post construction and remedial measures undertaken, as required, with the aim that all disturbed areas are reprofiled to a stable landform, consistent with original contours and drainage lines, and vegetated with a self-sustaining, non-pest species groundcover.	Pipeline Works	Pipeline Licence	Construction and operation	AG7
MM-RH06	<b>Reinstatement of infrastructure</b> All access tracks, fences and gates will be reinstated post construction in consultation with landholders and any relevant third parties.	Pipeline Works	Pipeline Licence	Construction	AG4

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
<b>Air quality</b>					
<b>EES evaluation objective:</b> <b>To minimise potential adverse social, economic, amenity and land use effects at local and regional scales.</b>					
MM-AQ01	<b>Dust suppression</b> Dust suppression will be used at construction areas as required using water sprays, water carts or other devices: <ul style="list-style-type: none"> <li>on unpaved work areas</li> <li>on sand, spoil and aggregate stockpiles</li> <li>during the loading and unloading of dust generating materials.</li> </ul>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Consent under the Marine and Coastal Act 2018, Pipeline Licence	Construction	AQ1, AQ2, AQ3, B2, TP4, C10
MM-AQ02	<b>Restricted vehicle movements</b> After arrival at the Project site, vehicles, plant and equipment will remain within the construction footprint and on public roads and designated tracks to the extent practicable, unless undertaking survey and property management activities as agreed with the landholder.	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Consent under the Marine and Coastal Act 2018, Pipeline Licence	Construction	AQ1, AQ2,
MM-AQ03	<b>Crushed rock on access tracks</b> Where necessary to prevent dust generation and agreed with relevant stakeholders, crushed rock will be placed on existing permanent unsealed access tracks.	Pipeline Works	Pipeline Licence	Construction	AQ1, AQ2
MM-AQ04	<b>Speed restrictions</b> Vehicle speed will be restricted to 40 km/hr on the construction right of way (ROW) and access tracks.	Pipeline Works	Pipeline Licence	Construction	AQ1, AQ2
MM-AQ05	<b>Covering vehicle loads</b> Construction vehicles with potential for loss of loads (such as dust or litter) will be covered when using public roads.	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Incorporated Document, Consent under the Marine and Coastal Act 2018	Construction	AQ4, TP4, C10
MM-AQ06	<b>Weather monitoring</b> Weather conditions will be monitored for extreme heat and/or wind events using systems such as the Bureau of Meteorology forecasts and works will be assessed to determine if they need to be modified if conditions are likely to result in air quality impacts at sensitive receptors.	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Consent under the Marine and Coastal Act 2018, Pipeline Licence	Construction	AQ3
MM-AQ07	<b>Dust monitoring</b> Observational monitoring of dust along the construction right of way (ROW) and facilities will be undertaken. If dust is observed causing a hazard, then MM-AQ1 will be implemented. If dust levels cannot be contained then works will be modified or stopped until the dust hazard is reduced to a manageable level.	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Consent under the Marine and Coastal Act 2018, Pipeline Licence	Construction	AQ1, AQ2, AQ3, AQ4

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-AQ08	<b>Odorous soils management</b> In the event that odorous soils (other than acid sulfate soils) are uncovered during construction, the following measures will be undertaken: <ol style="list-style-type: none"> <li>Cessation of ground disturbance at the location and within the immediate vicinity.</li> <li>Assessment of site contamination and determination of appropriate management actions in consultation with suitably qualified personnel.</li> <li>If odorous material is found to be contaminated, EPA will be notified as soon as reasonably possible.</li> <li>Acid sulfate soils will be managed in accordance with mitigation measures described in <b>Chapter 10 Contamination and acid sulfate soils</b> (MM-C02 and MM-C03).</li> </ol>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Consent under the <i>Marine and Coastal Act 2018</i> , Pipeline Licence	Construction	AQ6, C10
MM-AQ09	<b>Equipment maintenance</b> Plant and equipment will be maintained in good condition to minimise spills and air emissions that may cause nuisance.	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Consent under the <i>Marine and Coastal Act 2018</i> , Pipeline Licence	Construction	AQ5, AQ8
MM-AQ10	<b>Maintenance of the FSRU burners</b> Maintenance of the FSRU burners in the boilers and engines will be undertaken regularly as per manufacturer's specifications.	Gas Import Jetty Works	EPA licence for the operation of the FSRU	Operation	AQ7
MM-AQ11	<b>Monitoring FSRU air emissions</b> An air quality monitoring programme will be designed and implemented to confirm FSRU emission rates comply within tolerances of the design specifications.	Gas Import Jetty Works	EPA licence for the operation of the FSRU	Design and Operation	AQ7
<b>Business</b>					
<b>EES evaluation objectives:</b> <b>To minimise potential adverse social, economic, amenity and land use effects at local and regional scales.</b>					
MM-BU01	<b>Pipeline alignment change to Stony Point rail corridor</b> The pipeline alignment and construction methodology in Hastings has been changed to the Stony Point rail corridor to reduce amenity impacts (traffic, visual, air quality and noise) on businesses along Frankston-Flinders Road and sensitive receptors in Hastings.	Pipeline Works	Pipeline Licence	Design	B1, B2, TP3, TP5



MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
<b>Contamination and acid sulfate soils</b>					
<b>EES evaluation objectives:</b>					
<b>To minimise adverse effects on water (including groundwater, waterway, wetland, estuarine, intertidal and marine) quality and movement particularly as they might affect the ecological character of the Western Port Ramsar site.</b>					
<b>To minimise generation of wastes by or resulting from the project during construction and operation, including accounting for direct and indirect greenhouse gas emissions.</b>					
MM-C01	<b>Contaminated Soils</b> <ol style="list-style-type: none"> <li>Contaminated soil will be managed in accordance with the SEPP (Prevention and Management of Contaminated Land) and EPA Victoria interim Position Statement on PFAS.</li> <li>All Project personnel will be made aware of the presence of contaminated soils at the following locations during the site(s) induction: <ul style="list-style-type: none"> <li>The Crib Point Receiving Facility</li> <li>The Esplanade adjacent to the former BP refinery</li> <li>The former BP refinery</li> <li>within the railway corridor between High Street and Cool Store Road in Hastings</li> <li>Between KP7.3 and KP7.9 in Hastings (if intrusive investigation confirms presence of contaminated soils).</li> </ul> </li> <li>An intrusive investigation will be undertaken in the area between KP7.3 and KP7.9 once vegetation has been cleared, to confirm the presence or absence of contaminated soils, due to historical and existing land uses. Should contamination of soil and/or groundwater be encountered, consider additional mitigation measures (if required).</li> <li>Construction works during wet weather will be avoided unless conditions are such that property damage, contaminated soils, and surface water issues can be managed.</li> <li>Where excess soils, including HDD screened cuttings, are required to be disposed off-site, these will be sampled and categorised in accordance with EPA Victoria Publications IWRG702 – Soil Sampling and IWRG621 – Soil Hazard Categorisation and Management.</li> <li>Handling and transport of contaminated spoil for off-site treatment/disposal will be in accordance with Environment Protection (Industrial Waste Resource) Regulations 2009.</li> <li>Any material imported for use as backfill will comply with the EPA Victoria Publication IWRG621 – Soil Hazard Categorisation and Management for 'Fill Material' and must be accompanied by relevant documentation confirming its compliance to the 'Fill Material' criteria.</li> </ol>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence, Consent under the Marine and Coastal Act 2018	Construction	C1

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-C02	<p><b>Acid Sulfate Soils Management Protocol</b></p> <p>An Acid Sulfate Soils (ASS) Management Protocol will be developed in accordance with the Industrial Waste Management Policy (Waste Acid Sulfate Soils) 1999 and EPA Victoria Publication IWRG655.1 – Acid Sulfate Soil and Rock, and the Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils (CASS BPMG, 2010). As agreed with EPA Victoria, the Pipeline Works ASS Management Protocol will be developed and included in the Pipeline Works CEMP which will be approved in accordance with the Pipeline Act 2005, in consultation with EPA Victoria. The Pipeline Works ASS Management Protocol will include:</p> <ol style="list-style-type: none"> <li>All soils be managed as AASS or PASS in accordance with CASS BPMG (2010).</li> <li>A risk assessment together with proposed risk mitigation and management measures across the Project Area including justification of why certain areas may be excluded from treatment by liming.</li> <li>Monitoring of the performance of mitigation and management measures, including potential remedial measures where/if required.</li> <li>All relevant site-based personnel will be made aware of the locations where PASS (MW09 at KP17.8, MW10 at KP19.4, BH207 at KP32.4, BH209 at KP32.6 and BH34 at KP35.4) has been identified.</li> <li>Relevant site-based personnel will be trained on the requirements of the acid sulfate materials management procedure including the recommended time period over which soils may be temporarily stockpiled before treatment commences as recommended by the CASS BPMG (2010).</li> <li>Construction works will not occur during wet months unless conditions are such that land degradation and surface water management problems can be avoided or appropriate mitigation measures implemented.</li> <li>Minimise the duration of stockpiling of untreated ASS by staging soil excavations in a manner that takes in constraints on stockpile duration where treatment of ASS may not be required, as per the CASS BPMG (2010)</li> <li>Include a procedure for managing unexpected discovery of ASS/PASS in the ASS Management Protocol.</li> <li>If ASS are to be stockpiled for an extended time period (exceeding the CASS BPMG (2010) recommended short-term stockpiling durations), the potential generation of acidic leachate will be managed by treating the stockpile and or spreading a guard layer before stockpiling and/or covering the stockpile.</li> <li>Run-off that has the potential to be impacted by stockpile material will be directed into the open trench (where practicable).</li> <li>Minimise activation of PASS by minimising duration (less than 10 days) and extent of dewatering activities, such as dewatering immediately prior to installation of pipe and minimise the time that trench sections and bell holes are open.</li> <li>Implement a monitoring program in accordance with the CASS BPMG (2010) to measure the effectiveness of the management strategy and to provide an early warning of any environmental degradation or impact to surface water, groundwater and soils.</li> </ol>	Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Approval under the EPBC Act	Construction	C2, C3

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-C03	<p><b>Acid Sulfate Soil Management Plan</b></p> <p>An Acid Sulfate Soil Management Plan (ASSMP) will be developed in accordance with the Industrial Waste Management Policy (Waste Acid Sulfate Soils) 1999 and EPA Victoria Publication IWRG655.1 – Acid Sulfate Soil and Rock, and the Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils (CASS BPMG, 2010). The ASSMP shall be approved by EPA and will include:</p> <ol style="list-style-type: none"> <li>Relevant site-based personnel will be trained on the requirements of the acid sulfate materials management procedure including the recommended time period over which soils may be temporarily stockpiled before treatment commences as recommended by the CASS BPMG (2010).</li> <li>The duration of stockpiling of untreated ASS will be minimised by taking into consideration the constraints on stockpile duration where treatment of ASS may not be required, as per the CASS BPMG (2010).</li> <li>Include a procedure for managing unexpected discovery of ASS/PASS in the ASSMP.</li> <li>If ASSs are to be stockpiled for an extended time period (exceeding the CASS BPMG (2010) recommended short-term stockpiling durations), the potential generation of acidic leachate will be managed by treating the stockpile and or spreading a guard layer before stockpiling and/or covering the stockpile.</li> <li>Run-off that has the potential to be impacted by stockpile material will be captured (where practicable) and managed in accordance with the CASS BPMG (2010).</li> <li>A monitoring program will be implemented in accordance with the CASS BPMG (2010) to measure the effectiveness of the management strategy and to provide an early warning of any environmental degradation or impact to surface water, groundwater and soils.</li> </ol>	Gas Import Jetty Works	Incorporated Document, Consent under the Marine and Coastal Act 2018, Approval under the EPBC Act	Construction	C2

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-C04	<p><b>Contaminated groundwater/trench water</b></p> <p>a. Contaminated groundwater/trench water will be managed in accordance with:</p> <ul style="list-style-type: none"> <li>SEPP (Waters)</li> <li>PFAS National Environmental Management Plan.</li> </ul> <p>b. All Project personnel will be made aware of the presence of contaminated groundwater containing PFAS east of the former Tyabb landfill.</p> <p>c. Disturbance of saturated soil and groundwater within the PFAS affected area will be minimised. The management plan will include measures to prevent migration of PFAS into the surrounding soil or surface water.</p> <p>d. An intrusive groundwater investigation will be undertaken in the area between KP7.3 and KP7.9 once vegetation has been cleared, to confirm presence or absence of contaminated groundwater within the area, due to historical and existing land uses.</p> <p>e. Water from areas that have been identified as contaminated will not be discharged to the environment (land, waterways, sewer).</p> <p>f. Contaminated water will either be treated onsite, depending on contaminant encountered (this may require approval from the EPA Victoria) or disposed offsite to an EPA Victoria licensed facility. Alternatively, adopt a construction approach where contaminated groundwater may be left in-situ (i.e. not abstracted or disturbed).</p>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence, Consent under the Marine and Coastal Act 2018	Construction	C4, C5, C6
MM-C05	<p><b>Drilling muds disposal</b></p> <p>Drilling muds/additives used in horizontal directional drilling (HDD) will be selected to avoid impact to sensitive environments during drilling activities as per <b>Chapter 9</b> Groundwater (MM-HG02).</p> <p>Place bunds and/or drainage channels around the upper edges of the drill site and work area, to divert natural runoff around and away from the drill site and avoid cross contamination of the drilling compound runoff as per <b>Chapter 8</b> Surface water (MM-SW09).</p> <p>a. Monitor circulation of drilling muds throughout the HDD operation for indication of an inadvertent drilling mud release</p> <p>b. Drilling muds will be disposed in accordance with Environment Protection (Industrial Waste Resource) Regulations 2009 and EPA Victoria Industrial Waste – Classification for Drilling Mud, Victoria Government Gazette G37.</p> <p>c. Records of HDD mud disposal will be maintained and kept for 2 years as per the EPA Victoria Industrial Waste – Classification for Drilling Mud.</p>	Pipeline Works	Pipeline Licence	Construction	C7

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-C06	<b>Hydrostatic Test Water</b> <ol style="list-style-type: none"> <li>Hydrostatic test water will be managed in accordance with SEPP (Waters).</li> <li>Water will be reused where practicable to conserve water and minimise the number of discharge locations.</li> <li>If oxygen scavengers and biocides are used during hydrostatic testing, they will be neutralised before disposal, in accordance with manufacturer guidelines, to ensure that the water is free from any remaining active biocide and oxygen scavengers before discharge to land.</li> <li>Dams and hydrostatic test water may remain for landholders' beneficial use with landholder and regulatory approval if water quality requirements are met.</li> </ol>	Pipeline Works	Pipeline Licence	Construction	C8
MM-C07	<b>Unknown contamination</b> <p>In the event that unknown contamination (including asbestos containing material) is encountered during construction:</p> <ol style="list-style-type: none"> <li>Cease ground disturbance at the unknown contamination location and within the immediate vicinity.</li> <li>Assess site contamination and identify appropriate remedial action.</li> </ol>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Incorporated Document	Construction	C9
MM-C08	<b>Fuel and chemical leaks/spills</b> <ol style="list-style-type: none"> <li>Diesel generators will be bunded.</li> <li>Routine and scheduled maintenance of vehicles and plant/machinery/equipment will be undertaken to minimise the potential for leaks/spills to occur.</li> </ol>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Safety cases	Construction and operation	C11, C13
MM-C09	<b>Construction waste management</b> <ol style="list-style-type: none"> <li>Waste will be managed in accordance with Environment Protection (Industrial Waste Resource) Regulations 2009, including establishment of appropriate and secured waste storage locations on-site, as required.</li> <li>Waste management procedures will be developed and implemented.</li> <li>Identification of suitable waste disposal locations will occur prior to construction commencing in consultation with a licenced waste contractor.</li> <li>Waste materials will be reused or recycled where practicable or collected and transported by licenced waste contractors for disposal at appropriately licenced facilities.</li> <li>Portable toilet facilities will be available for work construction crews at designated locations.</li> <li>Waste containers will be available for different types of waste generated onsite.</li> <li>Waste containers will be located at each worksite to enable collection of waste, with regular removal from worksites to designated storage areas.</li> <li>Refuse containers will be lidded to mitigate fauna access.</li> </ol>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018	Construction	C12

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-C10	<b>Operation waste management</b> <ol style="list-style-type: none"> <li>Waste will be managed in accordance with Environment Protection (Industrial Waste Resource) Regulations 2009, including establishment of appropriate and secured waste storage locations on-site, as required.</li> <li>Waste management procedures will be developed and implemented.</li> <li>Waste materials will be stored appropriately, reused or recycled where practicable, or collected and transported by licenced contractors for disposal at appropriately licenced facilities.</li> <li>Waste containers will be available for different types of waste generated onsite.</li> <li>Waste containers will be lidded to mitigate fauna access.</li> </ol>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018	Operation	C14

### Greenhouse gas

#### EES evaluation objective:

**To minimise generation of wastes by or resulting from the Project during construction and operation, including accounting for direct and indirect greenhouse gas emissions.**

MM-GG01	<b>Reduce ROW</b> The width of the 30 m ROW has been reduced to minimise clearance of vegetation. This will assist in retaining natural carbon sequestration processes.	Pipeline Works	Pipeline Licence	Design	GG1
MM-GG02	<b>Equipment specification - fuel efficiency</b> Environmental principles in contracts will encourage fuel efficiency to reduce the consumption of fossil fuels and therefore enable a reduction in greenhouse gas emissions from the construction and operation of the Project.	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence	Construction and Operation	GG2, GG6
MM-GG03	<b>Source local materials</b> Locally sourced materials, including those provided by suppliers, will be considered and implemented where they are of comparable quality and utility.	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence	Construction	GG2
MM-GG04	<b>Low embodied energy materials</b> Low embodied energy materials (e.g. substituting concrete mixes) will be considered and used where they are of comparable quality and utility.	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence	Construction	GG2
MM-GG05	<b>Managing the quality of materials</b> The quality of key materials (i.e. pipe and pipe fittings) will be inspected before supplying to site or ROW for installation to avoid additional transport and handling of materials.	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence	Construction	GG3



MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-GG07	<b>Sustainable resource management practices</b> Sustainable resource management practices will be used to avoid the inefficient use of materials, fossil fuels, and electricity.	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence	Construction	GG5
MM-GG08	<b>Implementation of the PEM</b> Implementation of the Protocol for Environmental Management (GHG emissions and energy efficiency in industry) (PEM) for the operation of the FSRU will include conducting a minimum level 2 audit on the FSRU operation annually to identify inefficiencies; the preparation of an action plan for implementing greenhouse gas emissions reduction measures; annual reporting of measures to the EPA for a period of three years.	Gas Import Jetty Works	Works Approval, EPA licence for the operation of the FSRU	Operation	GG6

### Groundwater

#### EES evaluation objective:

**To minimise adverse effects on water (including groundwater, waterway, wetland, estuarine, intertidal and marine) quality and movement particularly as they might affect the ecological character of the Western Port Ramsar site.**

MM-HG01	<b>Dewatering activities</b> Where groundwater is entering an excavation, dewatering activities will be limited to two days or less in trenched sections and HDD tie-in bell holes, and 10 days or less at thrust bore sections and thrust bore bell holes, wherever practicable.	Pipeline Works	Pipeline Licence	Construction	HG1, HG2, HG3, C3
MM-HG02	<b>Drilling muds</b> Horizontal directional drilling muds will preferentially use non-toxic (e.g. bentonite) biodegradable drilling muds, where geotechnical conditions allow.	Pipeline Works	Pipeline Licence	Construction	HG4, C7
MM-HG03	<b>Suitably qualified contractors</b> Contractor(s) that are suitably qualified and experienced in trenchless installation techniques and piling installation will be used.	Pipeline Works and Gas Import Jetty Works	Pipeline Licence, Incorporated Document	Construction	HG4, HG10, C7
MM-HG04	<b>Minimise the duration of open trench and bell holes</b> The duration that trench sections and bell holes are open will be minimised to reduce the potential for poor quality runoff impacting groundwater.	Pipeline Works	Pipeline Licence	Construction	HG5
MM-HG05	<b>Sourcing of groundwater</b> Sourcing of groundwater for construction supply (if required) will be in accordance with Section 50 Licence to take and use water of the Water Act 1989.	Pipeline Works	Pipeline Licence	Construction	HG6
MM-HG06	<b>Condition of groundwater bores</b> Through liaison with landholders, the location, condition and functionality of potentially affected bores (due to damage, destruction or loss of access) will be visually confirmed prior to construction commencing and make-good arrangements will be agreed if required.	Pipeline Works	Pipeline Licence	Construction	HG7
MM-HG07	<b>Compaction of trench backfill</b> Compaction of backfill using excavated material, where practicable, will be carried out to reduce the potential for preferential lateral flow along the trench	Pipeline Works	Pipeline Licence	Construction	HG9
MM-HG08	<b>Trench breakers</b> Trench breakers will be installed adjacent to watercourses, wetlands and steep slopes as shown in the standard drawing (CPT.2373-DWG-L-0106).	Pipeline Works	Pipeline Licence	Construction	HG9

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
<b>Historic heritage</b>					
<b>EES evaluation objective: To avoid or minimise adverse effects on Aboriginal and historic cultural heritage.</b>					
MM-HH01	<b>Horizontal directional drilling</b> Subject to further detailed geotechnical investigations confirming suitability, trenchless construction techniques will be used at the following location to minimise direct impacts on heritage values: <ul style="list-style-type: none"> <li>Denham Road farmhouse (VHI site H7921-0119)</li> </ul> Further measures will be identified to avoid and minimise direct impacts	Pipeline Works	Pipeline Licence	Design and Construction	HH1
MM-HH02	<b>Unexpected cultural heritage finds procedure</b> Procedures to implement if an unknown historic heritage site, value or object is discovered during construction will be incorporated in the EMP and CEMP. This will include guidelines on collection or salvage of historic heritage objects. This procedure will be discussed in the site(s) induction(s).	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Consent under the Marine and Coastal Act 2018, Pipeline Licence	Construction	HH2
MM-HH03	<b>Condition surveys and monitoring (former BP refinery administration building H1016)</b> A condition survey of the Victorian Heritage Register site (Former BP refinery administration building H1016) will be undertaken prior to commencing construction activities at Crib Point and following completion of construction activities at Crib Point. Any damage deemed to have resulted from the Project will be rectified by the proponent.	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Consent under the Marine and Coastal Act 2018, Pipeline Licence	Construction	HH3

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
<b>Landscape and visual</b>					
<b>EES evaluation objective: To minimise potential adverse social, economic, amenity and land use effects at local and regional scales.</b>					
MM-LV01	<b>Reinstate ground surface</b> The construction footprint will be reinstated with consideration of the vegetation composition and ground surface adjacent to the area and in consultation with the landholder.	Pipeline Works	Pipeline Licence	Construction	A risk assessment was not undertaken as part of this impact assessment
MM-LV02	<b>Landscape screening</b> Vegetation will be introduced to screen facilities within the viewshed of roads (such as The Esplanade) and where possible residences, if reasonably requested by affected landholders and with any necessary approvals granted.	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Consent under the Marine and Coastal Act 2018, Pipeline Licence	Design, construction and operation	A risk assessment was not undertaken as part of this impact assessment
MM-LV03	<b>Materials and finishes</b> Selection of materials and finishes will appropriately respond to the environment and be complementary to the setting.	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Incorporated Document, Works Approval, EPA licence for the operation of the FSRU	Design and Operation	A risk assessment was not undertaken as part of this impact assessment
MM-LV04	<b>Preventative maintenance</b> Exterior materials and finishes will be maintained to prevent aesthetic deterioration according to a schedule for cleaning, painting and general maintenance.	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence, Works Approval, EPA licence for the operation of the FSRU	Operation	A risk assessment was not undertaken as part of this impact assessment
MM-LV05	<b>Reflective surfaces</b> Reflective surfaces on infrastructure will be minimised to reduce reflection of artificial light where practicable.	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence, Works Approval, EPA licence for the operation of the FSRU	Design and Operation	A risk assessment was not undertaken as part of this impact assessment
MM-LV06	<b>Vegetation outside construction footprint</b> If there is any loss of trees and shrubs, due to construction outside the approved construction footprint, this will be replaced with appropriately selected small trees or large shrubs, in consultation with the affected landholder	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence	Construction and Operation	A risk assessment was not undertaken as part of this impact assessment

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
<b>Noise and vibration</b>					
<b>EES evaluation objective: To minimise potential adverse social, economic, amenity and land use effects at local and regional scales</b>					
MM-NV01	<p><b>Managing noise and vibration from construction activities</b></p> <p>Construction noise and vibration will be managed with reference to Section 2 (Construction and Demolition Site Noise) of EPA Publication 1254 Noise Control Guidelines and Section 5 (Noise and vibration) of EPA Publication 480 Environmental Guidelines for Major Construction Sites. This includes the development of a plan to manage noise and vibration during construction in consultation with the EPA.</p> <p>This plan will include the following general good practice measures:</p> <ul style="list-style-type: none"> <li>• using the lowest-noise work practices and equipment that meet the requirements of the job</li> <li>• locating site buildings, access roads and positioning plant such that the minimum disturbance occurs to the locality</li> <li>• installing broadband reversing alarms on construction vehicles and machinery in preference to 'beeper' reversing alarms - the site will also be planned to minimise the need for reversing of vehicles</li> <li>• turning off plant and vehicles when not being used</li> <li>• taking care not to drop spoil and construction materials that cause peak noise events</li> <li>• limiting works to the arrival of staff on site and toolbox meetings between 6am and 7am. The use of loud equipment, generation of unnecessary noise and the movement of vehicles on the construction footprint will be minimised where possible</li> <li>• undertaking all reasonable and feasible actions to comply the construction noise criteria derived using the method described in MM-NV02.</li> </ul> <p>Where the construction noise levels are predicted or measured to be exceeded at sensitive receptor locations, all reasonable and feasible mitigation measures will be implemented to minimise the impact on the receptors, including the following onsite mitigation measures where required:</p> <ul style="list-style-type: none"> <li>• adopting engineering noise controls at the source (e.g. silencer, mufflers, enclosures) by all practical means using current technology – assumed reduction of 10 dB to 15 dB</li> <li>• selection of quieter equipment – assumed reduction of up to 5 dB</li> <li>• installation of onsite barriers such as hoardings or temporary screens to provide a noise barrier between any particularly noisy construction works and the residences - assumed reduction of 5 dB to 10 dB</li> <li>• respite periods by restricting the hours that the very noisy activities can occur.</li> </ul>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence, Consent under the Marine and Coastal Act 2018	Construction	B2, NV1, NV2, NV3, NV4, NV5, NV6, NV7

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID																														
MM-NV02	<p><b>Construction noise criteria</b></p> <p>Onsite noise mitigation measures will be implemented if construction noise is predicted to or does exceed the following construction noise criteria.</p> <p>An independent and qualified Project representative will be appointed to review and approve unavoidable night work (10 pm to 7 am) applications.</p>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence	Construction	NV1, NV2, NV3, NV4, NV5																														
<table><tr><th>Target area</th><th>Time of day</th><th>Construction noise criteria [LAeq(15-min) dB]</th></tr><tr><td colspan="3"><b>EPA normal working hours</b></td></tr><tr><td>Residential</td><td>Mon-Fri: 7am - 6pm</td><td>75</td></tr><tr><td>Educational institutions</td><td>Sat: 7am - 1pm</td><td>60</td></tr><tr><td>Parks and recreational areas</td><td></td><td>65</td></tr><tr><td>Community and commercial buildings</td><td></td><td>70</td></tr><tr><td colspan="3"><b>Outside of EPA normal working hours</b></td></tr><tr><td>Residential - Evening and weekend</td><td>Mon-Fri: 6pm - 10pm Sat: 1pm - 10pm Sun/Public Holiday: 7am - 10pm</td><td>Noise level at any residential premises not to exceed background (LA90, dB) noise by:<ul style="list-style-type: none"><li>10 dBA or more for up to 18 months after project commencement</li></ul></td></tr><tr><td>Residential – Night</td><td>Mon-Sun: 10pm - 7am</td><td>Noise inaudible within a habitable room of any residential premises  Noise level at any residential premises not to exceed background (LA90, dB) noise by 0 dB.</td></tr><tr><td>Residential – Unavoidable night works</td><td>Mon-Sun: 10pm - 7am</td><td>Application of all feasible and reasonable work practices to reduce unacceptable levels of noise</td></tr></table>						Target area	Time of day	Construction noise criteria [LAeq(15-min) dB]	<b>EPA normal working hours</b>			Residential	Mon-Fri: 7am - 6pm	75	Educational institutions	Sat: 7am - 1pm	60	Parks and recreational areas		65	Community and commercial buildings		70	<b>Outside of EPA normal working hours</b>			Residential - Evening and weekend	Mon-Fri: 6pm - 10pm Sat: 1pm - 10pm Sun/Public Holiday: 7am - 10pm	Noise level at any residential premises not to exceed background (LA90, dB) noise by: <ul style="list-style-type: none"><li>10 dBA or more for up to 18 months after project commencement</li></ul>	Residential – Night	Mon-Sun: 10pm - 7am	Noise inaudible within a habitable room of any residential premises  Noise level at any residential premises not to exceed background (LA90, dB) noise by 0 dB.	Residential – Unavoidable night works	Mon-Sun: 10pm - 7am	Application of all feasible and reasonable work practices to reduce unacceptable levels of noise
Target area	Time of day	Construction noise criteria [LAeq(15-min) dB]																																	
<b>EPA normal working hours</b>																																			
Residential	Mon-Fri: 7am - 6pm	75																																	
Educational institutions	Sat: 7am - 1pm	60																																	
Parks and recreational areas		65																																	
Community and commercial buildings		70																																	
<b>Outside of EPA normal working hours</b>																																			
Residential - Evening and weekend	Mon-Fri: 6pm - 10pm Sat: 1pm - 10pm Sun/Public Holiday: 7am - 10pm	Noise level at any residential premises not to exceed background (LA90, dB) noise by: <ul style="list-style-type: none"><li>10 dBA or more for up to 18 months after project commencement</li></ul>																																	
Residential – Night	Mon-Sun: 10pm - 7am	Noise inaudible within a habitable room of any residential premises  Noise level at any residential premises not to exceed background (LA90, dB) noise by 0 dB.																																	
Residential – Unavoidable night works	Mon-Sun: 10pm - 7am	Application of all feasible and reasonable work practices to reduce unacceptable levels of noise																																	

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-NV03	<p><b>Vibration safe working distances</b></p> <p>Additional management measures will be required where occupancies, structures and assets are within the safe working distances derived using the values in the following standards:</p> <ul style="list-style-type: none"> <li>• British Standard BS 6472-1:2008 Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting – Table 1 Vibration dose value ranges which might result in various probabilities of adverse comment within residential buildings</li> <li>• German Standard DIN4150-3:2016-12: Table 1 – Guideline values for vibration velocity for evaluating the effects of short-term vibration on structures</li> <li>• German Standard DIN4150-3:2016-12: Table 3 – Guideline values for vibration velocity for evaluating the effects of short-term vibration on buried pipework</li> <li>• An asset owner's utility standards.</li> </ul>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence, Consent under the <i>Marine and Coastal Act 2018</i>	Construction	NV6, NV7



MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-NV04	<p><b>Offsite noise management measures</b></p> <p>Offsite management measures will be considered where measured or predicted construction noise exceeds noise management levels for an extended period of time. Levels in the following table are not noise limits but represents an action to minimise the noise impact at the receptor after all reasonable and feasible measures have been implemented to manage construction noise impacts onsite.</p>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence	Construction	NV2, NV3, NV4
		Time period	Noise management levels LAeq (15 min)	Management measures	
<b>EPA normal working hours</b>					
		Mon-Fri: 7am - 6pm	External construction noise level:	Works notification	
		Sat: 7am - 1pm	LAeq(15min) > 75dBA		
<b>EPA evening/weekend hours and public holidays</b>					
		Mon-Fri: 6pm - 10pm	External construction noise level:	Works notification	
		Sat: 1pm - 10pm	LAeq(15min) > LA90, Evening + 10 dB	Individual briefings Specific notification	
		Sun/PH: 7am - 10pm		Respite offer	
<b>EPA night hours</b>					
		Mon-Sun: 10pm - 7am	External construction noise level: LAeq(15min) > LA90, night + 5 dB	Works notification Individual briefings Specific notification Respite offer	
<b>EPA unavoidable works at night</b>					
		Mon-Sun: 10pm - 7am	External construction noise level: LAeq(15min) > 55 dB Noise will be predicted or measured above 55 dBA for two or more nights to justify the application of management measures. Residents with special requirements will be consulted with on a case-by-case basis.		

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-NV05	<p><b>HDD noise control</b></p> <p>A minimum of 10 dB noise reduction will be installed adjacent to the following HDD sites:</p> <ul style="list-style-type: none"> <li>HDD Location 4: Warringine Park (northern work site)</li> <li>HDD Location 5: Along the railway corridor, southern end of Hastings</li> <li>HDD Location 6: Along the railway corridor, northern end of Hastings</li> <li>HDD Location 7: Beneath Kings Creek along the railway corridor.</li> </ul> <p>Stationary equipment such as generators and pumps will be stored within shipping containers or suitable acoustic enclosures at all HDD locations.</p> <p>The impacts and the design of site-specific mitigation will be determined prior to construction works via acoustic modelling and confirmed during construction via onsite monitoring.</p>	Pipeline Works	Pipeline Licence	Design and Construction	NV4
MM-NV06	<p><b>Noise and vibration monitoring</b></p> <p>Noise and vibration monitoring will be undertaken during construction at:</p> <ul style="list-style-type: none"> <li>the nearest noise sensitive residential property or properties impacted by out-of-hours works to confirm compliance with the construction noise criteria and to confirm modelling outputs</li> <li>the nearest building or assets that are within derived set back distances for structural damage</li> <li>where an asset owner's utility standards are at risk of being exceeded.</li> </ul> <p>A response plan will be developed to manage potential impacts if nominated criteria are exceeded, including:</p> <ul style="list-style-type: none"> <li>actions taken to rectify the exceedance</li> <li>actions to minimise risk of reoccurrence</li> <li>name of person(s) responsible for undertaking the required actions.</li> </ul> <p>The duration of the monitoring will be determined by a suitably qualified acoustic consultant.</p>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence, Consent under the <i>Marine and Coastal Act 2018</i>	Construction	NV4, NV7

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-NV07	<p><b>Managing cumulative noise impacts</b></p> <p>The EPA will be consulted during detailed design and the construction planning phase for the purpose of managing cumulative noise impacts associated with the following projects:</p> <ul style="list-style-type: none"> <li>• Pakenham East rail depot construction and operation (Department of Transport)</li> <li>• Healesville-Koo Wee Rup Road upgrade construction (Major Road Projects Victoria and the principal contractor)</li> <li>• Crib Point Jetty upgrade construction works (Port of Hastings Development Authority)</li> <li>• Crib Point Jetty operation (United Petroleum).</li> </ul> <p>The Project will (construction only):</p> <ul style="list-style-type: none"> <li>• avoid overlap of sensitive works at night and other periods where excessive noise and vibration is likely</li> <li>• incorporate a requirement within the Stakeholder Engagement Management Strategy to notify residents of any unavoidable project overlaps and the potential impact to the community.</li> </ul>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Consent under the Marine and Coastal Act 2018, Pipeline Licence, Works Approval	Design, Construction and Operation	NV5, NV10, NV12
MM-NV08	<p><b>Managing impacts from ground vibration</b></p> <p>The following management measures will be applied when the setback distances derived using MM-NV03 are encroached:</p> <ul style="list-style-type: none"> <li>• substitution of high vibration producing rock breakers, rollers or compactors for models that produce lower levels of vibration (applicable between Reid Parade and Graydens Road Hastings)</li> <li>• consultation with above and below ground utility asset owners to establish construction vibration limits to maintain asset integrity</li> <li>• vibration monitoring of sensitive buildings / structures inside safe working distances</li> <li>• condition survey of properties within safe working distances.</li> </ul>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence, Consent under the Marine and Coastal Act 2018	Construction	NV6, NV7,
MM-NV09	<p><b>Condition surveys</b></p> <p>Condition surveys will be undertaken for sensitive buildings and assets that are within the derived set back distances for structural damage.</p>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence	Construction	NV7
MM-NV10	<p><b>Operational noise controls</b></p> <p>The Gas Import Jetty Works and Pakenham Delivery Facility will identify and specify practical measures for minimising noise to achieve the intent of EPA Publication 1411 - Noise from Industry in Regional Victoria in consultation with EPA.</p>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence, Consent under the Marine and Coastal Act 2018, Works Approval	Operation	NV8, NV11

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-NV11	<p><b>Operational noise cumulative controls</b></p> <p>Noise from the Project when operating near existing industry will be managed in accordance with Section 5 - Managing Noise from Multiple Premises within the EPA Publication 1413 - Applying NIRV to Proposed and Existing Industry where relevant.</p> <p>Where required, other infrastructure operators on the jetty and Project surrounds will be engaged to offset noise sources contributing to potential cumulative impacts.</p> <p>Additional cumulative impact management strategies will be developed in consultation with EPA, if required.</p>	Gas Import Jetty Works and Pipeline Works	Incorporated Document, Pipeline Licence, Works Approval	Operation	NV10, NV12
MM-NV12	<p><b>Notification for mooring LNG carriers</b></p> <p>If the verification noise monitoring demonstrates that the night time Recommended Maximum Levels have not yet been met, residents within 1.5 kilometres of the FSRU will be notified at least 24 hours before the planned arrival of an LNG carrier between 10 pm and 7 am.</p> <p>Project communications resources such as the Project website will include a link to the Port of Hastings Development Authority Weekly Shipping List. This list provides a forecast for the ships that are expected to be in Port each week.</p>	Gas Import Jetty Works	Incorporated Document, EPA licence for the operation of the FSRU	Operation	NV9
MM-NV13	<p><b>Post-commissioning measurements</b></p> <p>Noise produced by the Gas Import Facility will be measured within six months of the beginning of commercial operation to confirm compliance with the Recommended Maximum Levels. Noise measurements will be undertaken in accordance with current Victorian EPA requirements to verify compliance with the Recommended Maximum Levels applied at 132 The Esplanade Crib Point, 43 Disney Street Crib Point and 103 The Esplanade Crib Point.</p> <p>Onsite noise mitigation (administrative, operating or engineering controls) will be taken as soon as practicable if the measured noise levels demonstrate that the Recommended Maximum Levels are exceeded.</p> <p>Offsite noise mitigation (noise screening, offers of respite during noisy periods of work or architectural acoustic treatment to the exterior of rooms used for sleeping) will be considered where onsite noise mitigation cannot be feasibly constructed to reduce external noise to below the Recommended Maximum Levels.</p>	Gas Import Jetty Works	Incorporated Document	Operation	NV9

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
<b>Marine biodiversity</b>					
<b>EES evaluation objectives:</b> <b>To avoid, minimise or offset potential adverse effects on native flora and fauna and their habitats, especially listed threatened migratory species and listed threatened communities.</b>  <b>To minimise adverse effects on water (including groundwater, waterway, wetland, estuarine, intertidal and marine) quality and movement particularly as they might affect the ecological character of the Western Port Ramsar site.</b>					
MM-ME01	<b>Design of intake, velocity and screening grilles</b> The intake of the FSRU will be designed in the following way: <ul style="list-style-type: none"> <li>The intake will have a screening grille with spaces not exceeding 100 millimetres by 100 millimetres in the vertical dimension to prevent larger organisms such as penguins and large fish from entering the intake and becoming trapped, injured or killed.</li> <li>Design the intake so water is taken in horizontally. This allows fish and other free-swimming marine biota to sense the intake current and swim away from the intake.</li> <li>Limit the intake velocity to 0.15 m/s at peak production so that fish and other biota can swim away from the intake without becoming impinged or entrained.</li> </ul>	Gas Import Jetty Works	EPA licence for the operation of the FSRU, Works Approval for the FSRU, Approval under the EPBC Act, Consent under the Marine and Coastal Act 2018	Operation	ME1 ME2 ME3 ME4 ME5A ME5B ME6NNE ME6NA ME6EPB ME7 ME8 ME9
MM-ME02	<b>Limit seawater regasification flows between September and February</b> To minimise potential entrainment impacts the FSRU will operate at a 14-day moving average (mean) regasification seawater flow of 312,000 m <sup>3</sup> per day between September and February (inclusive). The use of a 14-day moving average reflects the sensitivity of certain marine biota and accounts for their renewal rate and the flushing rate in North Arm of Western Port that has been established as part of the marine entrainment investigations.	Gas Import Jetty Works	EPA licence for the operation of the FSRU, Approval under the EPBC Act, Consent under the Marine and Coastal Act 2018	Operation	ME5A, ME25, ME35
MM-ME03	<b>Use 6 port design to increase mixing</b> The FSRU has been designed with a six discharge port configuration to optimise dilution and minimise thermal differences. The discharge ports will be located above the seawater inlets and will be spaced at a minimum distance of 10 metres.	Gas Import Jetty Works	Safety case for a Major Hazard Facility, Consent under the Marine and Coastal Act 2018, EPA licence for the operation of the FSRU, Approval under the EPBC Act	Operation	ME10, ME11, ME12, ME13, ME14, ME15, ME16, ME17, ME18, ME19, ME30, ME31, ME32, ME33, ME34, ME35, ME36, ME37, ME38, ME39, ME40
MM-ME04	<b>High velocity discharge to increase dilution</b> Seawater will be discharged from the FSRU at high velocity no less than 5 m/s to facilitate mixing and increase dilution so that seawater can return to ambient conditions.	Gas Import Jetty Works	EPA licence for the operation of the FSRU, Consent under the Marine and Coastal Act 2018	Construction and Operation	ME20, ME21, ME22, ME23, ME24, ME25, ME26, ME27, ME28, ME29

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-ME05	<b>Port of Hastings Handbook</b> All vessels will comply with the Port of Hastings Development Authority Safety and Environmental Management Plan and Port Operating Handbook.	Gas Import Jetty Works	Consent under the <i>Marine and Coastal Act</i> 2018, PoHDA approval of the SEMP and SMS for the port operations aspects of the FSRU, and integration of these requirements into the PoHDA whole of Port of Hastings SEMP	Operation	ME41, ME42, ME43, ME44, ME47,
MM-ME06	<b>Compliance with the environment management plan, regulations or policies</b> The operation of the FSRU and LNG carriers proposed to enter, moor and depart the Port of Hastings will be consistent with present and past operations within the port. Operation will comply with the same port and state environmental guidelines, regulations and environmental management plans as other similar vessels.	Gas Import Jetty Works	EPA licence for the operation of the FSRU, Consent under the <i>Marine and Coastal Act</i> 2018, PoHDA approval of the SEMP and SMS for the port operations aspects of the FSRU, and integration of these requirements into the PoHDA whole of Port of Hastings SEMP	Construction and Operation	ME45, ME46, ME49, ME50
MM-ME07	<b>No unauthorised cleaning</b> Hull cleaning and propeller polishing will be undertaken in accordance with the PoHDA and Harbour Master requirements.	Gas Import Jetty Works	Consent under the <i>Marine and Coastal Act</i> 2018, EPA licence for the operation of the FSRU	Operation	ME44
MM-ME08	<b>Operation within dredged area</b> The FSRU will be moored and operated within an area that has been dredged in the past to create and develop the port.	Gas Import Jetty Works	Consent under the <i>Marine and Coastal Act</i> 2018, EPA licence for the operation of the FSRU	Operation	ME45, ME46,
MM-ME09	<b>Class and IMO standards</b> The FSRU and LNG carriers will be designed and constructed to be compliant with shipping class and IMO standards.	Gas Import Jetty Works	Safety case for a Major Hazard Facility	Operation	ME47



MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-ME10	<b>FSRU mooring and LNG carriers pilotage</b> The FSRU will be moored in an area where the seabed has already been disturbed to create a port. Vessels will be operated by experienced captains and at speeds less than the maximum allowed vessel speed.	Gas Import Jetty Works	Safety case for a Major Hazard Facility, Consent under the Marine and Coastal Act 2018, EPA licence for the operation of the FSRU	Operation	ME47
MM-ME11	<b>Limiting lights to the number for safe operations</b> Limit lights to the number for safe operations. Reduce direct light spill where possible subject to meeting navigation and vessel safety standards.	Gas Import Jetty Works	Safety case for a Major Hazard Facility, Consent under the Marine and Coastal Act 2018	Operation	ME48,
MM-ME12	<b>Appropriate antifoul, cleaned and inspected in accordance with regulations</b> FSRU and LNG carriers to be protected with approved use antifoul and will be inspected by biofouling/IMS inspectors. Vessels will also be cleaned at appropriate intervals.	Gas Import Jetty Works	Consent under the Marine and Coastal Act 2018, EPA licence for the operation of the FSRU	Operation	ME49, ME50
MM-ME13	<b>Exclusion zone around FSRU</b> A vessel exclusion zone will be established that extends for 100 m from the FSRU and any moored LNG carriers. Recreational or commercial fishing within this zone will not be allowed, which means that the fish aggregation will be untouched, except for natural predation.	Gas Import Jetty Works	Approval of the exclusion zone under the Marine Transport and Offshore Facilities Act, Consent under the Marine and Coastal Act 2018	Operation	ME51
MM-ME14	<b>Policing of exclusion zone</b> Exclusion of recreational or commercial fishing within the exclusion zone will be the responsibility of PoHDA.	Gas Import Jetty Works	Consent under the Marine and Coastal Act 2018	Operation	ME51

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-ME15	<b>Speed restrictions and Master watches for whales</b> FSRU and LNG carriers will comply with the maximum allowed vessel speeds and comply with operational instruction if a marine mammal is encountered.	Gas Import Jetty Works	Consent under the <i>Marine and Coastal Act</i> 2018, PoHDA approval of the SEMP and SMS for the port operations aspects of the FSRU, and integration of these requirements into the PoHDA whole of port of Hastings SEMP, Consent under the <i>Marine and Coastal Act</i> 2018, PoHDA approval of the SEMP and SMS for the port operations aspects of the FSRU, and integration of these requirements into the PoHDA whole of port of Hastings SEMP	Operation	ME52

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-ME16	<p><b>Monitoring program</b></p> <p>A marine monitoring program will be prepared in consultation with the EPA and will be included in the Gas Import Jetty Works Operational Environmental Management Plan. The monitoring program will be designed in collaboration with a statistician and will include the following measures, having regard to the relevant objectives for each measure:</p> <ol style="list-style-type: none"> <li>1. Monitor Rates and Characteristics of all discharges. Monitoring and recording of the flow rate, temperature and residual chlorine concentration of all major discharges, excluding fire water, water curtain and ballast water, is required.</li> </ol> <p>The objectives are to keep a record of all discharges, confirm that the discharge rate and chlorine concentration are within the values set out in EPA licences and, if not, provide the trigger for remedial action.</p> <ol style="list-style-type: none"> <li>2. Plankton Survival Study. Collect plankton samples on the seawater intake and discharge of the FSRU and analyse the samples to determine the percentage of zooplankton and fish larvae survival. Plankton samples must be collected and analysed once per quarter for a period of three years (12 sampling events in total).</li> </ol> <p>The EES risk assessment is based on the conservative assumption of 100 per cent loss of small biota that is entrained in the FSRU. The objective of this task is to establish whether a smaller loss might actually occur in practice, so the effect of the Project on primary productivity in North Arm is less than calculated.</p> <ol style="list-style-type: none"> <li>3. Seabed Biota Monitoring in Port Area. Baseline surveys and post-commissioning surveys every six months for three years of benthic fauna abundance, diversity and composition to detect if there are any significant changes to infauna communities in the Port area and within North Arm.</li> </ol> <p>The objective is to check whether the impact on infauna is less or more than the impact predicted in the EES from the combined area of chlorine and temperature change on the seabed near Berth 2.</p>	Gas Import Jetty Works	EPA licence for the operation of the FSRU, Consent under the <i>Marine and Coastal Act</i> 2018, EPA licence for the operation of the FSRU, Consent under the <i>Marine and Coastal Act</i> 2018	Operation	ME5A

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-ME16 (Cont.)	<p>4. Water Quality Sampling. Every quarter for a period of three years, monitor seawater at six sites down-current of the FSRU and at reference sites to accurately determine chlorine produced oxidants (CPO) concentration and temperature change as a result of FSRU operation. Collect replicate samples for quality control.</p> <p>The objective is to check whether the predicted extent of chlorine concentration and the temperature anomaly matches the EES predictions and, if a greater extent, what corrective action should be taken to limit the extent. The distribution of CPO can be calculated from the measured extent of temperature.</p> <p>5. Transplanted Mussel Monitoring. Two times per year for a period of three years, deploy 10 sets of mussels at different sites, for example, 100 metres, 200 metres, 400 metres, 800 metres and 1,500 metres to the north and south of the FSRU. Leave the mussels in place for 21 days for each monitoring period. At the end of the 21 day period, retrieve mussels and analyse for chlorinated organics.</p> <p>The objective is to check whether there is measurable or significant accumulation of chlorinated or brominated organics in biota. Mussels are recognised as an appropriate method to accumulate and collect chlorinated organics (if present) for analysis. If there are elevated levels (e.g. exceeding background levels at reference sites) then a review of chlorination rates and procedures will be undertaken.</p>				

### Safety, hazard and risk

#### EES evaluation objective:

To provide for safe and cost-effective augmentation of Victoria's natural gas supply in the medium to longer term.

To minimise potential adverse social, economic, amenity and land use effects at local and regional scales.

MM-HR01	<p><b>Gas Import Jetty Works safety standards</b></p> <p>The Gas Import Jetty Works will be designed, constructed and operated to meet relevant safety standards. The FSRU will be designed, operated and maintained under the purview of DNV GL. It will comply with the Rules for Classification as required to retain its Class Notation. This will include requirements for inspection, maintenance and functionality of all on-board safety systems.</p>	Gas Import Jetty Works	Safety case for FSRU as a Major Hazard Facility (subject to amendment of OHS Regulations), Gas Import Jetty Works (exc FSRU), Consent under the Marine and Coastal Act 2018	Design, Construction and Operation	No environmental risk assessment was undertaken as part of this study. In the context of the safety, hazard and risk assessments, risk is distinct from the environmental risks assessed in the other EES technical studies.
---------	---	------------------------	---	------------------------------------	--

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-HR02	<b>Pipeline Works safety standards</b> The Pipeline Works will be designed, constructed and operated in accordance with AS/NZS 2885. This will include completion of a Safety Management Study with the identification of threats and appropriate mitigation measures including increased depth of burial, heavier duty piping and protective slabs.	Pipeline Works	Safety case under the Gas Safety Act, Pipeline Licence	Design, Construction and Operation	No environmental risk assessment was undertaken as part of this study. In the context of the safety, hazard and risk assessments, risk is distinct from the environmental risks assessed in the other EES technical studies.
MM-HR03	<b>Process control system and automated emergency shutdown systems</b> The operation of the Gas Import Jetty Works and Pipeline Works will be monitored using high integrity process automation and shutdown systems. Abnormal conditions will have alarms locally and remotely to fully attended control rooms. Out of normal conditions will result in an automatic shutdown of gas operations via closing of emergency shutdown valves. The control, monitoring and shutdown systems will be fail-safe and be designed to best industry practices with redundancy. The pipeline is also fitted with two mainline valves along its alignment to limit loss of gas in the event of a leak. MLV1 can be closed remotely.	Gas Import Jetty Works and Pipeline Works	Pipeline Works safety case, Gas Import Jetty Works safety case (exc. FSRU), Safety case for a Major Hazard Facility, Pipeline Licence, Consent under the Marine and Coastal Act 2018, Incorporated Document	Design and Operation	No environmental risk assessment was undertaken as part of this study. In the context of the safety, hazard and risk assessments, risk is distinct from the environmental risks assessed in the other EES technical studies.
MM-HR04	<b>Fire Protection</b> The FSRU and LNG carriers will be provided with their own onboard fire protection and suppression systems. This is a requirement of the DNV GL class notation. Active fire protection and suppression will be provided for liquid fires and gas fires on the Jetty in compliance with Australian Standards. The design fire case for Berth 2 fire systems is a jet fire in the MLA area. The required firewater cooling rate is for the ship/shore manifold area, which is defined as the MLAs and associated piping and valves as well as for FSRU hull cooling. The diesel fuel supply will be designed for six hours of firewater per pump. The current design calls for two x 100% firewater pumps. The system will be designed as a dry pipe system (i.e. no requirement for a jockey pump to maintain pressure), and be designed for saltwater service, providing an indefinite supply of water. Fire and gas detection will be provided along the gas piping on the jetty.	Gas Import Jetty Works	Incorporated Document, Safety case for the Gas Import Jetty Works (exc. FSRU), Safety case for a Major Hazard Facility, Consent under the Marine and Coastal Act 2018	Design and Operation	No environmental risk assessment was undertaken as part of this study. In the context of the safety, hazard and risk assessments, risk is distinct from the environmental risks assessed in the other EES technical studies.

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-HR05	<p><b>Dangerous goods</b>            Dangerous goods, as defined by the Australian Dangerous Goods Code, and flammable and combustible liquids will be stored and handled in accordance with the Dangerous Goods Act 1985, Dangerous Goods (Storage and Handling) Regulations 2012, EPA Victoria Publication 1698 – Liquid Storage and Handling Guidelines and all relevant Australian Standards including but not limited to the requirements of:</p> <ul style="list-style-type: none"> <li>AS1940 – The storage and handling of flammable and combustible liquids</li> <li>AS1210 – Pressure vessels</li> <li>AS4343 – Pressure equipment – hazard levels</li> <li>AS3846 – The handling and transport of dangerous cargoes in port areas</li> <li>AS2941 – Fixed fire protection installations – pumpset systems</li> <li>AS/NZS60079 – Explosive atmospheres.</li> </ul>	Gas Import Jetty Works and Pipeline Works	Pipeline Works safety case, Gas Import Jetty Works safety case (exc. FSRU), Safety case for a Major Hazard Facility, Consent under the Marine and Coastal Act 2018	Construction and Operation	No environmental risk assessment was undertaken as part of this study. In the context of the safety, hazard and risk assessments, risk is distinct from the environmental risks assessed in the other EES technical studies.
MM-HR06	<p><b>Monitoring of chemical and fuel storage facilities</b>            Routine visual monitoring and recording of chemicals and fuel storage facilities will occur as part of routine operational practices.</p>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Incorporated Document	Construction and Operation	No environmental risk assessment was undertaken as part of this study. In the context of the safety, hazard and risk assessments, risk is distinct from the environmental risks assessed in the other EES technical studies.

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-HR07	<b>Emergency response plans</b> Emergency response plans, such as for spills, will be developed and implemented for both the construction and operations phases of the Project.	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Incorporated Document	Construction and Operation	No environmental risk assessment was undertaken as part of this study. In the context of the safety, hazard and risk assessments, risk is distinct from the environmental risks assessed in the other EES technical studies.
MM-HR08	<b>Site Safety Advisor</b> A suitably competent person will be appointed as Site Safety Advisor during construction and will have on-site a set of the relevant safety data sheets (SDS) for hazardous and dangerous materials available at the site office	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Incorporated Document	Construction	No environmental risk assessment was undertaken as part of this study. In the context of the safety, hazard and risk assessments, risk is distinct from the environmental risks assessed in the other EES technical studies.

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
<b>Social</b>					
<b>EES evaluation objective:</b> <b>To minimise potential adverse social, economic, amenity and land use effects at local and regional scales.</b>					
MM-SO01	<b>Consultative mechanism for information and enquiries</b> A consultative mechanism will be developed: <ul style="list-style-type: none"> <li>to make the results of environmental monitoring available to the community</li> <li>to make information relating to potential risks to human health and safety available to the public as required. (see mitigation measure MM-SE01)</li> <li>for residents to make enquires, lodge complaints etc. during construction (see mitigation measure MM-SE02)</li> </ul>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the <i>Marine and Coastal Act 2018</i> , Incorporated Document	Construction and Operation	A risk assessment was not undertaken as part of this impact assessment
MM-SO02	<b>Consultation on recreational activity at Woolleys Beach</b> The Crib Point Stony Point Committee of Management Inc. and the community will be consulted with to identify a suitable foreshore location and propose additional recreational infrastructure, to accommodate activity displaced from Woolleys Beach North.	Gas Import Jetty Works	Incorporated Document, Consent under the <i>Marine and Coastal Act 2018</i>	Operation	A risk assessment was not undertaken as part of this impact assessment
MM-SO03	<b>Consultation with directly affected landholders</b> Consultation with directly affected landholders will be undertaken to ensure impacts associated with the construction and operational phases of the Pipeline Works are minimised and/or that compensation is appropriate considering site specific impacts.	Pipeline Works	Pipeline easement acquisition process	Construction and Operation	A risk assessment was not undertaken as part of this impact assessment
MM-SO04	<b>Source local workers</b> Workers, supplies and services during construction and operation will be sourced from the local area as appropriate.	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the <i>Marine and Coastal Act 2018</i> , Incorporated Document	Construction and Operation	A risk assessment was not undertaken as part of this impact assessment
MM-SO05	<b>Community fund</b> Detailed arrangements for the community fund will be resolved in partnership with relevant community stakeholders. In particular, there will be community led involvement in how the fund will be set-up, managed and spent.	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Incorporated Document	Construction and Operation	A risk assessment was not undertaken as part of this impact assessment



MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-SE01	<p><b>Stakeholder Engagement Management Strategy</b> A Stakeholder Engagement Management Strategy will be prepared to facilitate ongoing consultation between the proponent and the community (including relevant Councils, government authorities, adjoining affected landowners and businesses and other community groups directly impacted by the Project). The Stakeholder Engagement Management Strategy will be a requirement of the EMP for the Gas Import Jetty Works. For the Pipeline Works, the Stakeholder Engagement Management Strategy will be consistent with the Consultation Plan being prepared for the Pipeline Licence. The Stakeholder Engagement Management Strategy will:</p> <ul style="list-style-type: none"> <li>• identify people and organisations to be consulted during the design and work phases</li> <li>• set out procedures and mechanisms for the regular distribution of accessible information about or relevant to the Project</li> <li>• identify opportunities to provide information regularly about construction activities, schedules and milestones</li> <li>• detail the measures for advising the community in advance of upcoming works (where necessary)</li> <li>• set out procedures and mechanisms for consulting with relevant council(s) and government authorities/agencies</li> <li>• set out procedures and mechanisms: <ul style="list-style-type: none"> <li>- through which the community can discuss or provide feedback to the Proponent,</li> <li>- through which the Proponent will respond to enquiries or feedback from the community, and</li> <li>- to resolve any issues and mediate any disputes that may arise in relation to environmental management and delivery of the Project.</li> </ul> </li> </ul> <p>The Stakeholder Engagement Management Strategy will be implemented for the duration of the construction works and for 12 months following completion of construction.</p>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Incorporated Document	Design, Construction and Operation	B1, B2
MM-SE02	<p><b>Complaints management system</b> A complaints management system will be put in place that documents:</p> <ul style="list-style-type: none"> <li>• name of persons receiving complaint.</li> <li>• name of person making the complaint.</li> <li>• date and time of complaint.</li> <li>• nature of the complaint.</li> <li>• actions taken to rectify.</li> <li>• actions to minimise risk of reoccurrence.</li> <li>• name of person(s) responsible for undertaking the required actions.</li> <li>• communication of response to the complaint.</li> </ul>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Incorporated Document	Construction and Operation	

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
<b>Surface water</b>					
<b>EES evaluation objective: To minimise adverse effects on water (including groundwater, waterway, wetland, estuarine, intertidal and marine) quality and movement particularly as they might affect the ecological character of the Western Port Ramsar site.</b>					
MM-SW01	<p><b>Discharge water</b></p> <p>Water collected from within excavated trenches/ hydrostatic testing will be collected and treated if it exceeds EPA Victoria requirements prior to discharging. The relevant suggested measures outlined in EPA publication 480 (Section 4.4 Dewatering work sites) and in EPA publication 275 (Section 16 Water treatment) will be incorporated into the Pipeline Works CEMP.</p> <ol style="list-style-type: none"> <li>Non-contaminated groundwater and surface runoff that enters the open trenches and bell holes will be managed in accordance with SEPP (Waters).</li> <li>A description of the post-test (for hydrostatic testing) or post-extraction (for groundwater) treatment of the water will be included in the Pipeline Works CEMP as per direction from EPA Victoria.</li> <li>Discharge of water to land will avoid soil erosion or sedimentation of land or water. Sediment control devices to remove suspended solids and dissipate flow will be used where required.</li> <li>Water will not be discharged to waterways or into stormwater drains without approval from relevant authorities.</li> <li>Water will be tested for pH and salinity prior to discharge to land. pH will be between 4 and 9, and salinity will not exceed 6,000 µS/cm.</li> <li>Water that cannot be treated to meet the relevant discharge criteria will be disposed to an EPA Victoria licensed facility.</li> <li>Relevant landholder(s) and water authorities will be consulted and permission obtained prior to discharge to land.</li> <li>Discharge to land will not occur within 50 metres of watercourses.</li> <li>Discharge will be to low gradient, stable, grassed areas and be undertaken in accordance with landholder requirements and through "irrigation type" system to prevent scour or erosion. Visual monitoring during land discharge will be undertaken to ensure water does not enter existing waterways.</li> <li>Contaminated water will be managed in accordance with mitigation measures described in <b>Chapter 10 Contamination and acid sulfate soils</b> (MM-C04).</li> </ol>	Pipeline Works	Pipeline Licence, Approval under the EPBC Act	Construction	HD1
MM-SW02	<p><b>Managing runoff</b></p> <ol style="list-style-type: none"> <li>Flow diversion banks will be placed upstream of the spoil material if required.</li> <li>An overflow spillway will be constructed to allow runoff from external catchments to pass over the spoil material at a controlled location without causing erosion.</li> </ol>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Incorporated Document, Approval under the EPBC Act	Construction	HD2, HD4

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-SW03	<b>Watercourse trenching during no flow conditions</b> Where practicable, all trenched crossings of ephemeral watercourses will be constructed during no or low flow conditions and reinstated as soon as possible.	Pipeline Works	Pipeline Licence	Construction	HD2, HD3, HD4
MM-SW04	<b>Watercourse trenching</b> Where trenching is undertaken over a watercourse the following mitigation measures will be undertaken: <ul style="list-style-type: none"> <li>a. Weather forecasts will be monitored to minimise the likelihood of having open trenches at the waterway when high rainfall events are expected.</li> <li>b. Where watercourses are trenched, all obstructions to flow will be removed as soon as practicable after the pipe has been laid and backfilled.</li> <li>c. The pipeline will be assembled and prepared so that it can be immediately installed once the trenching over the watercourse has been undertaken.</li> <li>d. Waterway reinstatement will be carried out in consultation with the relevant authorities.</li> <li>e. The exposed trench within the watercourse and riparian zones will be reinstated immediately following the installation and commissioning of the pipeline, including providing suitable compaction and revegetation.</li> <li>f. Waterway reinstatement will be designed to avoid future erosion over the pipeline alignment. This may include the use of riprap made of stones to stabilise the waterway.</li> <li>g. If necessary, a geofabric will be provided to prevent erosion and scour until the vegetation has established.</li> <li>h. Visual monitoring will be undertaken downstream of the trench during flow events if the trench has not been reinstated.</li> <li>i. Temporary diversions will be provided if there is permanent or tidal flow in the waterway in accordance with International Erosion Control Association (IECA) Best Practice Erosion and Sediment Control Appendix P: Land-based Pipeline Construction (2008).</li> </ul>	Pipeline Works	Pipeline Licence, Approval under the EPBC Act	Construction	HD2, HD3, HD6, HG5
MM-SW05	<b>Watercourse trenchless crossing</b> Subject to further detailed geotechnical investigations confirming suitability, the following watercourses will be crossed by trenchless techniques: Kings Creek (KP7), Warringine Park Swamp (KP4.8), Watson Creek (KP 18.9), Vowell Drive Wetlands (KP22.9), Cardinia Creek (KP40.1), Toomuc Creek (KP41.1), Lower Gum Scrub Creek (KP41.0), Deep Creek (KP41.2), Langwarrin Creek (KP20.9). For watercourses managed by Melbourne Water, the HDD profile design will meet or exceed Melbourne Water's minimum design requirements.	Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018	Construction	HD2, HD3, HD4

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-SW06	<b>Fuel and chemical storage</b> The following measures will be implemented to ensure that fuel and chemical storage is safe and spilt liquids do not cause environmental harm: <ol style="list-style-type: none"> <li>fuels and chemicals stored on site will be minimised</li> <li>fuels and chemicals will not be stored close to surface waters</li> <li>bunds or other appropriate containment methods will be installed for stored liquids</li> <li>dangerous goods will be stored and handled, and storage facilities monitored as per <b>Chapter 16 Safety, hazard and risk</b> (MM-HR05, MM-HR06).</li> </ol>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Incorporated Document	Construction and Operation	HD5, HD8
MM-SW07	<b>Spills prevention and management</b> <ol style="list-style-type: none"> <li>Spill kits will be available at locations where machinery/plant are operating, refuelling points and fuel and chemical storage locations.</li> <li>Spills of hazardous materials will be rendered safe, and where required, collected and transported by licenced waste contractors for disposal at appropriately licenced facilities, including cleaning materials, absorbents and contaminated soils.</li> <li>Staff training will include spills management procedures.</li> <li>Emergency response plans for spills will be developed as per <b>Chapter 16 Safety, hazard and risk</b> (MM-HR07).</li> </ol>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Incorporated Document	Construction and Operation	HD5, HD8, C11, C13
MM-SW08	<b>Refuelling of vehicles and mobile machinery</b> Refuelling of vehicles and machinery (excluding hand held machines) on the ROW will: <ol style="list-style-type: none"> <li>be undertaken with appropriate measures to contain spills</li> <li>utilise auto shut off valves</li> <li>not occur within 50m of a watercourse.</li> </ol>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Incorporated Document	Construction	HD5, HD8, C11, C13
MM-SW09	<b>Discharge from trenchless drilling sites</b> Specific construction techniques to prevent discharge of hazardous material from the trenchless drilling sites include: <ol style="list-style-type: none"> <li>Earth bunds/or and drainage channels will be placed around the upper edges of drill sites and work areas to divert natural runoff around and away from the site and prevent mixing with drilling compound runoff.</li> <li>Sump pits will be constructed at the bottom of the drill site. The sump pit will be positioned to capture runoff from the drilling compound. An earth bund will be placed around the sump pit to contain any spillage.</li> </ol>	Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Approval under the EPBC Act	Construction	HD4, HD5, C7, C8
MM-SW10	<b>Stockpiling</b> To minimise the impacts to upstream flood levels and allow flow to be conveyed across the ROW, the following measures will be adopted: <ol style="list-style-type: none"> <li>Avoid the creation of a continuous row of stockpiled materials that can cause water to pond on the upstream side.</li> <li>Provide regular gaps to allow flood water to pass through.</li> <li>Avoid stockpiling material near waterways. Material will be located away from the top of banks so that there is no restriction to the flow conveyance area.</li> </ol>	Pipeline Works	Pipeline Licence	Construction	HD6

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-SW11	<b>Facilities design</b> Permanent surface structures, including the Pakenham Delivery Facility and Crib Point Receiving Facility will be designed to maintain existing overland flow paths and not result in increased flood levels upstream of the sites.	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Incorporated Document	Design	HD7
MM-SW12	<b>Water Sensitive Urban Design (WSUD) treatments</b> WSUD treatments will be incorporated into the site design for the Crib Point Receiving Facility and the Pakenham Delivery Facility to capture surface runoff and reduce pollutants in accordance with the Best Practice Environmental Management Guidelines (CSIRO 1999).	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Incorporated Document	Design	HD9

### Terrestrial and freshwater biodiversity

#### EES evaluation objectives:

**To avoid, minimise or offset potential adverse effects on native flora and fauna and their habitats, especially listed threatened migratory species and listed threatened communities.**

**To minimise adverse effects on water (including groundwater, waterway, wetland, estuarine, intertidal and marine) quality and movement particularly as they might affect the ecological character of the Western Port Ramsar site.**

MM-FF01	<b>Unplanned vegetation loss</b> The approved vegetation clearing extent, including retained environmental features within the construction footprint, will be clearly demarcated and identified during the construction stage as follows: <ol style="list-style-type: none"> <li>Para-webbing, bunting and signage, construction fencing or fauna-specific temporary fencing in areas of special concern as follows:               <ul style="list-style-type: none"> <li>Merran's Sun-orchid population</li> <li>Southern Brown Bandicoot</li> <li>Swamp Skink</li> <li>Growling Grass Frog</li> <li>Warringine Park</li> <li>Any other areas of special concern noted during pre-clearance inspections</li> </ul> </li> <li>Bunting in any other areas of native vegetation, as well as habitat features to be retained within the construction footprint</li> <li>Survey pegs in remaining areas of cleared or non-native vegetation.</li> <li>Para-webbing or bunting will not be placed across existing access tracks so that access for landholders is maintained.</li> </ol> If clearing of native vegetation outside of the construction impact area is required for pipeline safety or maintenance during the operational phase, the area cleared will be the minimum necessary to complete the work and will be assessed and offset in accordance with the <i>Guidelines for the removal, destruction or lopping of native vegetation</i> (DELWP 2017). This requirement will be listed as a commitment in the Pipeline Works OEMP.	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Incorporated Document	Construction	FF1, FF2, FF3, FF4, FF5, FF6, FF7, FF15, FF18, FF19, FF20, FFO5, FFO8
---------	---	---	--	--------------	---

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-FF02	<p><b>Aquatic fauna impacts</b></p> <p>Construction works during wet months (e.g. June – September) will require measures to be put in place to ensure that land degradation and surface water management problems can be avoided or appropriate mitigation measures implemented.</p> <p>Where practicable, all trenched watercourse crossings will be constructed during no or low flow conditions. Where this is not practical, to further mitigate potential impacts to Australian Grayling and Dwarf Galaxias, work will be undertaken in accordance with the following measures:</p> <ol style="list-style-type: none"> <li>Flow diversion measures will be installed where construction of trenched watercourse crossings during no flow conditions is not feasible. Flow diversion measures may include pumps to ensure that water can be moved from one side of trench to the other, screened inlets (or other appropriate equipment) to minimise the entrapment of aquatic fauna and outlet structures that are designed to avoid scouring of the channel.</li> <li>Where watercourses are trenched, all obstructions to flow will be removed as soon as practicable after the pipe has been laid and backfilled.</li> <li>Watercourses will be reinstated such that bank stability at the crossing location is the same or better than prior to construction. Stabilising materials such as rock armouring, hydro mulch, jute matting or other suitable geotextile materials will be applied to watercourse banks where necessary.</li> <li>The pipeline will be assembled and prepared so that it can be immediately installed once the trenching over the watercourse has been undertaken.</li> </ol>	Pipeline Works	Pipeline Licence, Approval under the EPBC Act	Construction	FF12, FFO4

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-FF03	<p><b>Invasive weeds, pests, pathogens and waste</b> The following measures will be implemented to manage biosecurity risks:</p> <ul style="list-style-type: none"> <li>a. Consultation with landholders regarding property specific biosecurity management arrangements/ plans which are in place and followed by landholders.</li> <li>b. Undertake a baseline weed survey of the ROW to identify locations of existing weed infestations.</li> <li>c. Satisfy Australian Quarantine and Inspection Service (AQIS) regulatory requirements for any vehicles and equipment sourced from overseas.</li> <li>d. Inspection and certification of all vehicles and construction machinery upon arrival at site. Vehicles and construction machinery cannot access the ROW until certified as clean.</li> <li>e. Vehicles and construction machinery will not go outside of the construction footprint or approved roads and tracks unless undertaking survey or property management activities as agreed with the land owner.</li> <li>f. Operate in accordance with relevant elements of existing property specific biosecurity plans which landholders operate under.</li> <li>g. Monitoring of the condition of the ROW and other disturbed areas will be completed post-construction and remedial measures undertaken, as required, with the aim that all disturbed areas are re-profiled to a stable landform consistent with original contours and drainage lines and vegetated with a self-sustaining, non-pest species, sterile groundcover (on consultation with landholder land use requirements).</li> <li>h. Waste is to be managed in accordance with MM-C09 (construction waste management) and MM-C10 (operation waste management), which will require provision of lidded refuse containers to prevent fauna access, and their appropriate monitoring and removal.</li> <li>i. Any topsoil imported for easement maintenance will be of an appropriate quality.</li> <li>j. Develop a protocol for preventing spread of Cinnamon Fungus <i>Phytophthora cinnamomi</i>, including maps identifying any known areas, requirements for managing surface run-off and wash down locations/requirements.</li> </ul>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the <i>Marine and Coastal Act</i> 2018, Incorporated Document	Construction and operation	FF2, FF3, FF11, FF12, FF16, FF17, F19, FF20, FFO5
MM-FF04	<p><b>Contractor awareness</b> All Project personnel will be required to attend an induction that outlines environmental management requirements. This would include information on the biodiversity values of the Project study area, specifically areas of threatened flora and fauna habitat.</p>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the <i>Marine and Coastal Act</i> 2018, Incorporated Document	Construction and Operation	FF2, FF3, FF5, FF10, FF11, FF12, FF15, FF16, FF17, FF18, FF19, FF20, FFO5, FFO6

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-FF05	<p><b>Site Rehabilitation</b></p> <p>Habitat features removed during construction such as large hollow logs and large rocks will be returned to the ROW during rehabilitation if consistent with rehabilitation objectives at a particular location. If habitat features such as logs and rocks are not able to be reinstated within the ROW, every effort will be made to locate them in suitable nearby sites, such as nearby Council-managed bushland reserves (upon Council approval). Landholder requirements will be considered prior to returning habitat features to the ROW. Rehabilitation by assisted natural regeneration will be undertaken on the ROW, except within four metres of the pipeline, in the following areas where there is an increased risk of habitat fragmentation:</p> <ol style="list-style-type: none"> <li>1. Warringine Park (excluding existing pipeline easements)</li> <li>2. KP 7.3 to 8.3, excluding existing access roads</li> <li>3. KP 13.7 to 14.4</li> <li>4. KP 18.5 to 18.7</li> </ol> <p>A site specific Rehabilitation Plan will be prepared for Warringine Park in consultation with Mornington Peninsula Shire.</p> <p>The CEMP (and any relevant Site Rehabilitation Plans) will contain requirements for effective monitoring of the success of assisted natural regeneration and adaptive management responses for additional remediation works, if required. The construction footprint will be reinstated with consideration of the vegetation composition and ground surface adjacent to the area and in consultation with the landholder and in accordance with any agreement made as part of easement negotiations.</p>	Pipeline Works	Pipeline Licence, Easement conditions / agreements, Approval under the EPBC Act	Construction	FF1, FF2, FF3, FF4, FF5, FF6, FF13, FF15, FF16, FF17
MM-FF06	<p><b>Topsoil management</b></p> <p>The following mitigation measures will be implemented to manage topsoil:</p> <ol style="list-style-type: none"> <li>a. Vegetation will be cleared prior to stripping of topsoil.</li> <li>b. Topsoil will be stripped across the construction footprint to maximum depths determined during pre-construction surveys.</li> <li>c. Topsoil will not be stripped when saturated.</li> <li>d. Stripped topsoil will be stockpiled separately from woody material and subsoil stockpiles.</li> <li>e. Topsoil stockpile heights will not exceed two metres.</li> <li>f. Gaps in the linear topsoil stockpiles will be left at appropriate intervals for drainage and for the movement of vehicles and fauna through the site.</li> <li>g. Topsoil stockpiles, other than linear stockpiles on the ROW, will be clearly signposted.</li> <li>h. Topsoil will not be used as a padding material.</li> <li>i. Stockpiled topsoil will be respread over the construction footprint to a minimum depth of 100mm, or to the depth that topsoil was stripped if this was less than 100mm.</li> <li>j. Topsoil will not be respread for rehabilitation when saturated.</li> </ol>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Incorporated Document	Construction	FF4, FF6, FF13, FF16, FF17



MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-FF07	<p><b>Trench entrapment</b></p> <p>The following mitigation measures will be implemented to manage fauna trench entrapment:</p> <ol style="list-style-type: none"> <li>Minimising the period of time the trench is open.</li> <li>Providing opportunities for fauna to egress the trench such as ramped trench plugs or other appropriate mechanisms.</li> <li>Daily inspections of the open trench, by suitably qualified personnel, to remove trapped fauna as required.</li> <li>Install fauna shelter devices, such as sawdust filled bags, at intervals of one per 500m along the length of open trench and every 100m in those areas that will be subject to assisted natural regeneration.</li> </ol>	Pipeline Works	Pipeline Licence, Approval under the EPBC Act.	Construction	FF9
MM-FF08	<p><b>Injury and/or disturbance to fauna</b></p> <p>A suitably qualified wildlife handler will be present for clearing woody vegetation and stockpiles to:</p> <ol style="list-style-type: none"> <li>Inspect habitat in advance of clearing. This will include a walk-through/visual inspection of the habitat to be removed immediately prior to clearance to flush out fauna and capture and relocate.</li> <li>Advise on clearing techniques that minimise fauna impact.</li> <li>Keep records of important fauna interactions, listing the species concerned, the nature of the interaction and GPS coordinates.</li> </ol> <p>Fauna management standards will be included in the Gas Import Jetty Works EMP and Pipeline Works CEMP. A specific protocol will be developed for clearing Swamp Skink and Glossy Grass Skink habitat, in consultation with Mornington Peninsula Shire, which will refer to the management activity guidelines developed by Robertson and Clemann (2015) for Swamp Skink. This protocol will be included as a management standard in the Gas Import Jetty Works EMP and Pipeline Works CEMP.</p> <p>Noise impacts to fauna will be managed in accordance with MM-NV01 (managing noise from construction activities), MM-NV04 (noise management measures) and MM-NV05 (HDD noise control).</p> <p>Noise produced by the operational Gas Import Jetty and FSRU will be managed as per MM-NV13 (post-commissioning measurements), to confirm compliance with Recommended Maximum Levels. Those levels have been assessed here as unlikely to deleteriously affect fauna.</p>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Approval under the EPBC Act, Consent under the Marine and Coastal Act 2018	Construction and Operation	FF8, FF19, FF20, FF21, FFO1, FFO6

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-FF09	<p><b>Southern Brown Bandicoot</b></p> <p>The following measures will be implemented to manage Southern Brown Bandicoot:</p> <ol style="list-style-type: none"> <li>As soon as practicable following clearing, fencing suitable to exclude the Southern Brown Bandicoot will be installed at the edges of the construction footprint where it is adjacent to any of the 19 locations of Southern Brown Bandicoot habitat areas to reduce the likelihood of animals entering the construction footprint. Monitoring of fencing will be undertaken and repairs completed as required.</li> <li>In the event that Southern Brown Bandicoot are discovered within the construction footprint, all mobile construction equipment in the surrounding area will cease work, excluding use of light vehicles to move staff to and from the area. Mobile construction equipment will not recommence work until a wildlife handler has removed the individual or it has been confirmed that individual has left the workspace. Captured individuals will be removed and relocated to nearest adjacent habitat away from the construction area.</li> <li>If night time activities are required within or adjacent to any of the 19 locations of Southern Brown Bandicoot habitat, a wildlife handler will be available to the construction site.</li> <li>Dense cover of suitable native shrubs, or vegetation of similar structure, will be reinstated in any of the 19 locations of Southern Brown Bandicoot habitat impacted by the construction footprint by planting of semi-mature native shrubs or fast-growing tubestock, other than within 4 m of the pipeline and a narrow track to allow ground access for surveillance patrols. For areas within 4 m of the pipeline, revegetation will be limited to shallow-rooted ground cover species.</li> <li>Easement agreements with landholders will require that this vegetation be reinstated and protected.</li> </ol>	Pipeline Works	Pipeline Licence, Approval under the EPBC Act, Easement conditions / agreements	Construction	FF9, FF10, FF16
MM-FF10	<p><b>Merran's Sun-orchid, Pallid Sun-orchid and Gaping Sun-orchid</b></p> <p>The Pipeline Works will avoid threatened orchids and their habitat. A single 650 metre HDD will be used to avoid orchids and habitat between KP 1.13 and KP 1.7. During construction, a return line will need to be placed across orchid habitat to transport drilling mud between the HDD entry and exit points. The following measures will be put in place to protect orchids:</p> <ol style="list-style-type: none"> <li>Return line to be constructed from high quality HDPE pipe welded together to ensure risk of spill is negligible.</li> <li>Project Ecologist to supervise the placement of the return line, which will be micro-sited to avoid threatened orchids.</li> <li>Return line to be subject to regular visual inspection during drilling.</li> <li>Mud spill kits to be prepared and kept at drilling sites to allow for quick deployment in the very unlikely event of a mud spill.</li> <li>No vehicle access to be permitted in orchid habitat.</li> <li>Project Ecologist to supervise dismantling of return line and complete inspection of habitat following completion of drilling.</li> </ol>	Pipeline Works	Pipeline Licence	Construction	FF13

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-FF11	<p><b>Growling Grass Frog</b> The following mitigation measures will be implemented to manage impacts to the Growling Grass Frog:</p> <p>a. Two nocturnal pre-clearance surveys of the construction footprint for the Growling Grass Frog (as per Commonwealth of Australia 2009c) will be undertaken at each of the following locations within four days prior to clear and grade activities commencing, but only if clear and grade activities at these locations are to occur during the breeding season (spring and summer):</p> <ul style="list-style-type: none"> <li>• Farm Dam adjacent to KP21.5: KP21.4 to KP21.6</li> <li>• Western Outfall Drain: KP 30.8. to KP 31.8</li> <li>• Cardinia Creek: between KP 39.9 and the western cadastral boundary of Crown Allotment 24A Parish of Koo Wee Rup</li> <li>• Cardinia Creek: section of the access track linking to Ballarto Road, where it lies directly adjacent to Lot 1 Title Plan 828572X</li> <li>• Lower Gum Scrub Creek, Deep Creek and Toomuc Creek: KP 40.8 to KP 40.9</li> <li>• Lower Gum Scrub Creek, Deep Creek and Toomuc Creek: between the eastern cadastral boundary of Crown Allotment 97F Parish of Nar-nar-goon and KP 41.5</li> </ul> <p>b. Any Growling Grass Frog that can be located within the proposed construction footprint during these surveys will be relocated to suitable locations, as determined by the ecologist conducting the survey, within the adjacent waterways.</p> <p>c. If night time activities are required during the breeding season (spring and summer) within the survey areas described in (a)), a wildlife handler will be available to the construction site.</p> <p>d. Hygiene protocols as set out in Murray et al. (2011) will be followed when conducting the surveys described in (a).</p>	Pipeline Works	Pipeline Licence, Approval under the EPBC Act	Construction	FF11

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-FF12	<p><b>Migratory birds</b></p> <p>Project will adhere to the <i>National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds</i>. The OEMP will contain a monitoring procedure and an adaptive management response in order to detect, and appropriately respond to, migratory bird strikes with lighting. Appropriate responses might include red light filters on floodlights, use of green lamps, or dimming/reducing lighting at sensitive times. These have been shown to significantly reduce avian casualties resulting from bird strikes. Specific thresholds were not identified for migratory birds, however a number of qualitative assessments have shown that lighting of foraging areas does not impact occupation of a foraging area but may impact on migration routes. The OEMP will include a monitoring program for waders and waterbirds at Woolleys Beach and Jacks Beach to allow for potential responses to the operation of the FSRU to be detected and, if appropriate, mitigated through an adaptive management response.</p>	Gas Import Jetty Works	Incorporated Document, Approval under the EPBC Act, Consent under the Marine and Coastal Act 2018, EPA licence for the FSRU	Operation	FF19, FF20, FFO6
MM-FF13	<p><b>Surface water sedimentation and runoff</b></p> <p>Erosion and sediment controls will follow EPA Victoria publication 480 – <i>Environmental guidelines for major construction sites</i> (1996) and be included in the Gas Import Jetty Works EMP and Pipeline Works CEMP. Specific measures that will mitigate impacts to ecological values are included in MM-SW01 (discharge water), MM-SW02 (managing runoff), MM-SW04 (watercourse trenching) and MM-SW05 (watercourse trenchless crossing) and summarised below:</p> <ol style="list-style-type: none"> <li>Water velocity reduction measures and redirection of runoff to stable ground in accordance with MM-SW01 (discharge water).</li> <li>Testing, treatment and management of discharge water to minimise sedimentation and erosion in accordance with MM-SW01 (discharge water).</li> <li>Implementation of diversion banks and sediment control devices in accordance with MM-SW01 (discharge water) and MM-SW02 (managing runoff).</li> <li>Regular monitoring of all diversion banks and sediment control devices to ensure these are maintained in good condition throughout the construction phase.</li> </ol>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence, Consent under the Marine and Coastal Act 2018, Incorporated Document, Approval under the EPBC Act	Construction and Operation	FF19, FF20

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-FF14	<p><b>Surface water contamination</b></p> <p>Dangerous goods, as defined by the Australian Dangerous Goods Code, and flammable and combustible liquids will be stored and handled in accordance with all relevant Australian Standards and in accordance with MM-SW06 (fuel and chemical storage). Additional measures are outlined below.</p> <ol style="list-style-type: none"> <li>Routine visual monitoring and recording of chemicals and fuel storage facilities will be undertaken.</li> <li>Refuelling and maintenance of vehicles and machinery will be undertaken in accordance with MM-SW08 (refuelling of vehicles and mobile machinery) and MM-C08 (fuel and chemical leaks/spills) to minimise the potential for leaks or spills to occur. This includes the requirement for refuelling to occur in designated areas that are not within 50 metres of a watercourse.</li> <li>Spill kits will be available at locations where machinery/plant are operating, refuelling points and fuel and chemical storage locations and managed in accordance with MM-SW07 (spills).</li> <li>Waste is to be managed in accordance with MM-C09 (construction waste management) and MM-C10 (operation waste management).</li> </ol>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence Consent under the Marine and Coastal Act 2018 Incorporated Document Approval under the EPBC Act	Construction and operation	FF19, FF20, FF24, FFO4
MM-FF15	<p><b>Lighting impacts to fauna</b></p> <p>Light generated during construction will be managed in general accordance with the guidance measures described in the <i>National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds</i>.</p>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence Consent under the Marine and Coastal Act 2018 Incorporated Document Approval under the EPBC Act	Construction	FF4, FF19, FF20, FF23, FFO1, FFO6
MM-FF16	<p><b>Dust impacts to flora/fauna</b></p> <p>Management of construction activities will be undertaken in accordance with EPA Victoria publication 480 <i>Guidelines for major construction sites</i> (1996) in respect to dust, odour and construction vehicle emissions to minimise amenity impacts during construction.</p> <p>In accordance with MM-AQ01, dust suppression will be used at construction sites using water sprays, water carts or other devices on unpaved work areas, sand, spoil and aggregate stockpiles and during the loading and unloading of dust generating materials. Crushed rock will be placed on unsealed access tracks to suppress dust from vehicle movements, in accordance with MM-AQ03 (crushed rock on access tracks).</p> <p>Vehicle movements will be restricted to within designated access paths, turning circles and the construction footprint, in accordance with MM-AQ02 (restricted vehicle movements).</p> <p>Monitoring of weather conditions and dust will be undertaken in accordance with MM-AQ06 (weather monitoring) and MM-AQ07 (dust monitoring), which require works to modify or cease if weather conditions and/or dust levels are likely to exceed the thresholds specified.</p>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence Consent under the Marine and Coastal Act 2018 Incorporated Document	Construction	FF19, FF20, FF25

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
<b>Traffic and transport</b>					
<b>EES evaluation objective:</b>					
<b>To provide for safe and cost-effective augmentation of Victoria's natural gas supply in the medium to longer term.</b>					
<b>To minimise potential adverse social, economic, amenity and land use effects at local and regional scales.</b>					
MM-TP01	<b>Traffic Management Plan (TMP)</b> A Traffic Management Plan (TMP) will be prepared and implemented for construction by an appointed contractor for approval by the relevant local government authorities and VicRoads. The TMP will include specific measures for discrete components or stages of the works having the potential to impact on roads, shared use paths, bicycle paths, footpaths or public transport infrastructure. The TMP will include a number of sub-plans including: <ul style="list-style-type: none"> <li>Public Transport Disruption Management sub-plan</li> <li>Pedestrian and cyclist connectivity</li> </ul>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence Incorporated Document	Construction	TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, B1
MM-TP02	<b>Level Crossing Audit</b> An audit of the existing level crossing with passive control adjacent to Frankston-Flinders Road will be carried out prior to construction by a suitably qualified person to investigate if the current condition is suitable for construction use.	Pipeline Works	Pipeline Licence	Design and Construction	TP9
MM-TP03	<b>Stakeholder and consultation on transport changes</b> Prior to commencement of works and any temporary road closures, stakeholder consultation will be carried out and advanced notice given to affected residents, businesses or industries. This includes measures such as letter notification to inform residents and businesses of upcoming works and road closures. Stakeholder engagement and communications strategies will be established in the TMP and the Stakeholder Engagement Management Strategy to be prepared for the Project. Stakeholders may include local councils, road authorities, business operators and residents among others. During operation, regular meetings will occur with Mornington Peninsula Shire and an agreement will be reached with the Council to confirm pavement upgrades of impacted local roads around Crib Point, subject to the pavement strength survey results.	Gas Import Jetty Works and Pipeline Works Area	Pipeline Licence Incorporated Document	Construction and Operation	TP2, TP4, TP5, TP6, TP7, TP10

MM ID	Mitigation Measure	Works Area	Statutory Implementation	Timing	Associated Risk ID
MM-TP04	<p><b>Road Safety Audit</b></p> <p>Intersections will be designed and constructed to provide safe vehicle movements to the satisfaction of the responsible road management authority. A Road Safety Audit will be undertaken upon finalisation of the proposed routes and access tracks to confirm mitigation measures. This will consider investigating existing warning signage, lighting, turning movement lane provision and sight clearance and access track alignment modifications to improve safe intersection sight distance (SISD) for those that are non-conforming. This includes management measures such as advanced warning signage and flag lighting.</p> <p>In order to provide a safe route for the operation stage, signage improvements and speed reduction measures will be considered at Hunts Road to minimise the likelihood of collision with other vehicles at the black spot identified at the intersection between Hunts Road and the Coolart Road. The Road Safety Audit will be undertaken in consultation with local councils.</p>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence Consent under the Marine and Coastal Act 2018 Incorporated Document	Construction and Operation	TP8
MM-TP05	<p><b>Pavement strength survey</b></p> <p>A pavement strength survey will be undertaken for Woolleys Road and the Esplanade prior to construction to determine suitability to accommodate projected heavy vehicles for construction and operation phases. The survey's results will determine potential location where road upgrade may be required.</p> <p>Key gravel roads within the study area will be assessed separately and will be subject to specific maintenance checks. These roads will be named within the Traffic Management Plan once the Project details have been confirmed. Pavement will be restored to existing condition or better after construction.</p>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence Incorporated Document	Design, Construction and Operation	TP3, TP10
MM-TP06	<p><b>Public Transport Disruption Management sub-plan</b></p> <p>Prior to commencement of works affecting public transport services, a plan to minimise disruption to public transport services resulting from Project construction activities will be developed and implemented. The plan will be developed in consultation with relevant authorities such as Public Transport Victoria and the Department of Transport and will be included as a sub-plan to the TMP.</p>	Gas Import Jetty Works and Pipeline Works	Pipeline Licence Incorporated Document	Construction	TP6
MM-TP07	<p><b>Nitrogen Transport Plan</b></p> <p>A Nitrogen Transport plan will be developed. This plan will include identifying the preferred route(s), management measures at key intersections and permit requirements for access to roads that are not approved B-Double routes. Alternative roads to bypass Hastings and Somerville town centres will be used where possible.</p>	Gas Import Jetty	Incorporated Document Pipeline Licence	Operation	TP10, TP 11

## 25.8 Environmental management documentation

The statutory approvals and consents that are required for the Project to proceed would be implemented through a series of plans that would be required as conditions of approval. The plans would be required to implement and achieve compliance with relevant standards, guidelines and statutory approval obligations for the approvals and consents outlined in **Section 25.5** and to reflect the mitigation measures outlined in **Section 25.7**. Contractors would be responsible for reporting compliance to AGL and APA, who would then be responsible for compliance and associated reporting to relevant regulators as required.

All contractor documents prepared for the Project would be required to align with the documents and mitigation measures referenced in the statutory approvals and consents where relevant, as they detail mandatory conditions and contingency measures to protect environmental and social values throughout the life of the Project.

**Table 25-5** outlines the environmental management documentation that AGL and APA and their contractors would prepare and implement.

**Table 25-5:** Environmental management documentation

Documentation	Description
<b>Project proponent</b>	
Environmental Management Framework	This document sets out how the environmental aspects as described in this EES for the design, construction and operation phases of the Project would be managed. This EMF identifies mitigation measures that would define the environmental outcomes that must be achieved during design, construction and operation of the Project, and would be incorporated into the required statutory approvals and consents.
Decision and Approvals	Minister's assessment of EES to inform the conditions of the Statutory Approvals.
<b>APA</b>	
Decision and Approvals	<ul style="list-style-type: none"> <li>• EPBC Act approval</li> <li>• CHMP approvals</li> <li>• Pipeline Licence for construction and operation</li> <li>• Marine and Coastal Act consent</li> <li>• Safety Case</li> </ul>
Construction Environmental Management Plan (CEMP)	<p>A CEMP has been prepared in accordance with the <i>Pipelines Act 2005</i> Part 9 Division 3 Section 133 to accompany the Pipelines Licence application for approval by the Minister for Energy, Environment and Climate Change prior to commencing construction. The CEMP addresses the requirements of the Pipelines Act and Regulations and includes the pipeline related mitigation measures described in the EES. The CEMP for the Pipeline Works includes protocols for the management of:</p> <ul style="list-style-type: none"> <li>• Noise and vibration during construction hours and 24/7 construction events</li> <li>• Acid sulphate soils management</li> <li>• Surface water discharge management</li> <li>• Wildlife management</li> <li>• Groundwater management</li> <li>• Air quality management</li> </ul>
Safety Management Plan (SMP)	A Safety Management Plan has been prepared in accordance with the <i>Pipelines Act 2005</i> Part 9 Division 2 Section 126 and Pipeline Regulations to accompany the Pipeline Licence for approval by Energy Safe Victoria prior to commencing any pipeline operations.
Consultation Plan	A Consultation Plan would be prepared to describe the consultation approach during each of the stages of the pipeline and facility construction. The appointed contractors for the pipeline and facility would be required to prepare Construction Consultation Plan(s) based on the APA Consultation Plan which would provide specific activities relating to their works.
Cultural Heritage Management Plans (CHMPs)	Two Cultural Heritage Management Plans - CHMP 15834 and CHMP 15383 are being prepared for the Pipeline Works. Approval by a Registered Aboriginal Party (RAP) or Aboriginal Victoria in absence of RAP is required.



Documentation	Description
Safety Case	<p>A Safety Case would be prepared in accordance with the Gas Safety (Safety Case) Regulations 2018, which would describe the threats to safety that are posed by the facilities, define how these threats are controlled, and demonstrate that the controls are suitable.</p> <p>The Safety Case would be used by the contractor to draft the Construction Safety Management Plan which would be approved by APA prior to being submitted to Energy Safe Victoria for approval.</p>
Operational Environmental Management Plan (OEMP)	<p>The Operation Environmental Management Plan would detail APA's environmental management framework which seeks to mitigate the impact of pipeline operation of the environment. The OEMP would be prepared in accordance with Part 7 of the Pipeline Regulations 2017 and submitted to the Minister for Energy, Environment and Climate Change for acceptance.</p>
<b>AGL</b>	
Decision and Approvals	<ul style="list-style-type: none"> <li>• EPA Victoria Works Approval and EPA licence</li> <li>• Planning Scheme Amendment and Incorporated Document</li> <li>• Safety Case (gas) – natural gas transmission infrastructure</li> <li>• EPBC Act approval</li> <li>• CHMP approval</li> <li>• Marine and Coastal Act consent (use and development of marine and coastal Crown land)</li> <li>• Safety Case (OHS Act 2004) – Major Hazard Facility Licence for the Floating Storage and Regasification Unit (FSRU)<sup>2</sup></li> <li>• Flora and Fauna Guarantee Act permit – listed fish species</li> <li>• Fisheries Act permit – protected aquatic biota</li> </ul>
Environmental Management Plan (EMP)	<p>An EMP would be prepared in accordance with the conditions stipulated in the Incorporated Document for the Gas Import Jetty Works.</p> <p>It is anticipated that the Incorporated Document would require the preparation of an EMP which would include:</p> <ul style="list-style-type: none"> <li>• mitigation measures related to the Gas Import Jetty Works as developed in the EES and identified in the Minister's Assessment of the EES.</li> <li>• preparation of a Gas Import Jetty Works Construction Environmental Management Plan (CEMP) and Gas Import Jetty Works Operations Environmental Management Plan (OEMP) and other plans and procedures required by the mitigation measures.</li> </ul> <p>It is proposed that the Gas Import Jetty Works CEMP would include detailed management protocols for the management of:</p> <ul style="list-style-type: none"> <li>• Air quality during construction</li> <li>• Hazardous substances</li> <li>• Construction noise and vibration</li> <li>• Sediment, erosion and water quality during construction</li> <li>• Construction traffic and transport.</li> </ul> <p>It is proposed that the Gas Import Jetty Works OEMP would include detailed protocols for the management of the following during operation:</p> <ul style="list-style-type: none"> <li>• Air quality</li> <li>• Offsets Management Plan</li> <li>• Hazardous substances</li> <li>• Noise and vibration</li> <li>• Sediment, erosion and water quality</li> <li>• Marine Monitoring Plan</li> <li>• Operation traffic and transport.</li> </ul>
Cultural Heritage Management Plan (CHMP)	<p>A Cultural Heritage Management Plan – CHMP 16300 is being prepared for the Gas Import Jetty Works. Approval by a Registered Aboriginal Party (RAP) or Aboriginal Victoria in absence of RAP would be required.</p>
Safety Case (FSRU)	<p>A Safety Case would be prepared for the FSRU in accordance with the Occupational Health and Safety Regulations 2017 (Vic) with the assumption that, subject to regulatory amendments, the FSRU would require approval from WorkSafe Victoria.</p>

<sup>2</sup> note that the FSRU is currently not classified as a Major Hazard Facility (MHF) under the OHS Act. However, AGL will submit a safety case that is consistent with MHF requirements to WorkSafe Victoria for approval as if the FSRU is an MHF

Documentation	Description
Safety Case (Gas Import Jetty Works exc. FSRU)	A Safety Case would be prepared for the Gas Import Jetty Works (excluding the FSRU) and would address the design, construction, commissioning and operation of the works. Approval would be required by Energy Safe Victoria.
<b>APA Contractors</b>	
Construction Environmental Management Plan (Pipeline)	The contractor CEMP would be prepared prior to construction and would reflect the requirements and mitigation measures set out in APA's CEMP and approvals under the Pipelines Act. The appointed construction contractors for the pipeline and facility would be required to prepare a construction Consultation Plan based on the APA Consultation Plan and SMP which would provide specific activities relating to their works.
Traffic Management Plan (TMP)	The TMP would outline the means by which AGL and APA /contractor would minimise disruption to traffic, car parking, pedestrian and bicycle movements during construction. The TMP would be submitted for approval by VicRoads and the relevant municipality. The TMP would also include the following sub-plans: <ul style="list-style-type: none"> <li>Public Transport Disruption Management Sub-plan</li> </ul>
Public Transport Disruption Management Sub-plan	A Public Transport Disruption Management sub-plan would be prepared and included within the TMP for the Project. It would be implemented prior to the commencement of works affecting public transport services in order to minimise disruption to public transport resulting from Project construction.
HDD Management Plan	A HDD Management plan would be prepared and implemented by the contractor following approval from APA and submitted to the Pipeline Regulator for decision.
Acid Sulfate Soils Management Protocol	As agreed with EPA Victoria, the Pipeline Works ASS Management Protocol would be developed and included in the Pipeline Works CEMP which would require approval in accordance with the Pipeline Act 2005, in consultation with EPA Victoria.
<b>AGL Contractors</b>	
Construction Environmental Management Plan	The contractor CEMP would be prepared prior to construction and would reflect the requirements and mitigation measures set out in the relevant approvals
Traffic Management Plan (TMP)	The TMP would outline the means by which AGL and APA /contractor would minimise disruption to traffic, car parking, pedestrian and bicycle movements during construction.. The TMP would be submitted for approval by VicRoads and the relevant municipality. The TMP would also include the following sub-plans: <ul style="list-style-type: none"> <li>Public Transport Disruption Management Sub-plan</li> </ul>
Public Transport Disruption Management Sub-plan	A Public Transport Disruption Management sub-plan would be prepared and included within the TMP for the Project. It would be implemented prior to the commencement of works affecting public transport services in order to minimise disruption to public transport resulting from Project construction.
Nitrogen Transport Plan	A Nitrogen Transport Plan would be developed to identify preferred routes() for the transport of nitrogen, including management measures at key intersections and permit requirements for access to roads that are not approved B-Double routes.
Acid Sulfate Soils Management Plan (ASSMP)	An Acid Sulfate Soils Management Plan (ASSMP) would require approval from EPA Victoria. An ASSMP would be required for the approvals process to achieve consent under the <i>Marine and Coastal Act 2018</i> .

### 25.8.1 Management of change

The CEMPs and OEMPs that are conditions of statutory approvals would be controlled documents that would be subject to a revision and approval process. Documents would be developed, approved, implemented and revised as necessary throughout the life of the Project. All contractor plans and documentation would be prepared and then approved by AGL and APA prior to any works commencing. Where required, contractor management plans would also be subject to regulatory approval from the relevant government agencies.

AGL and APA and contractor documentation may require revisions and amendments based on continuous improvement due to changes in design and work practices, monitoring results, changes to legislation, risks or as a result of findings from internal or external audits, incidents, complaints and other compliance obligations voluntarily taken by AGL and APA.

Contractors would be required to submit all major revisions of environmental documentation to AGL and APA for review and approval. Major documentation revisions are considered to be changes that affect work and construction practices, roles and responsibilities, social and environmental risks and overall Project delivery.

#### Assessing environmental compliance

Approvals for the Project would include compliance requirements for AGL and APA and contractors. To monitor compliance, AGL and APA and contractors would be required to develop and implement a compliance system, undertake environmental monitoring as required, and report to AGL and APA and relevant regulators as and when required under the statutory approvals. Environmental compliance requirements would be included in all management plans.

The environmental compliance system to be adopted for the Project may include the following:

- defining non-conformance(s)
- developing and maintaining a register of non-conformances
- defining responsibilities and timelines for addressing non-conformance(s)
- monitoring, auditing and reporting requirements.

Implementing this compliance approach would inform the continuous improvement of the Project's environmental performance. A complaints management procedure in accordance with AS/NZS 10002:2014 'Guidelines for Complaints Management in Organisations' would also be implemented (see **Section 25.9**).

### 25.8.2 Monitoring

A range of monitoring programs would be specified in contractor CEMPs and OEMPs as relevant to monitor environmental compliance with the required mitigation measures and statutory approvals conditions. Monitoring frequency and monitoring parameters would be informed by regulatory requirements and scale of environmental risk. Monitoring may include periodic inspections of construction work areas and the operation of Project elements constructed.

The contractor CEMPs for the Pipeline Works and Gas Import Jetty Works would be subject to regular reviews to verify that:

- The monitoring frequency is sufficient to identify non-conformance(s) with the mitigation measures, statutory approvals conditions, management documents and applicable legislation
- The range of parameters being monitored is adequate (this is particularly relevant if an activity has led to an incident or complaint)
- Changes to approved construction and operational activities are adequately covered by the monitoring programs.

Any proposed changes to a monitoring program would be subject to statutory decisions before implementation. AGL and APA would ensure the changes satisfy compliance with all relevant mitigation measures. The contractors would be responsible for the ongoing management of baseline and monitoring data.

AGL and APA would be responsible for verifying that all baseline and monitoring data meet the specified monitoring requirements as well as ensuring that all datasets are maintained and accessible.

### 25.8.3 Environmental reporting

AGL and APA would be responsible for reporting compliance with mitigation measures and statutory approvals conditions to regulators. Reporting and external notification requirements would be outlined in detail within the contractor CEMPs and OEMPs including which matters require reporting, to which party and the timeframe within which the reporting should occur. Reporting would depend upon the terms of the Statutory Approvals but may include:

- monitoring results
- compliance with requirements
- non-conformances and corrective actions
- complaints register and responses
- notifications to the Registered Aboriginal Party and Aboriginal Victoria, if a potential Aboriginal site or artefact is identified
- notification to Heritage Victoria and DELWP if a heritage artefact is discovered
- environmental incident notifications.

### 25.8.4 Audits

A suitably qualified professional would conduct independent audits at agreed intervals to monitor compliance with the mitigation measures, management system obligations, statutory approvals conditions and relevant legislation and guidelines throughout all phases of the Project. Specific details of the audit schedule would be included in AGL's EMP and APA's CEMP. Audit regimes would be informed by the regulatory approval requirements applying to the Gas Import Jetty Works and the Pipeline Works components of the Project.

Audits would evaluate:

- compliance with all relevant mitigation measures contained in EMP, CEMP and OEMP
- compliance with statutory approvals conditions issued for the Project
- conformance with any other relevant environmental management documentation
- responses to non-conformances, complaints and incidents
- compliance with Safety requirements
- implementation of monitoring programs.

Conformance and compliance would be assessed through a range of inspections, observations of Project works, consultations with AGL and APA, operators and contractors, reviews of records and meeting minutes as agreed between AGL and APA and auditor.

### 25.8.5 Access to baseline and monitoring data

AGL and APA acknowledge that baseline data collected during the EES investigations could contribute to the improvement of environmental knowledge in the region. For example, the marine surveys conducted in Western Port and studies associated with flora and fauna values in the Pipeline alignment would build on previous studies and investigations in these areas. While much of the data would be publicly available through the EES technical studies and reporting, AGL and APA would make available appropriate supporting information collected as part of the EES investigations.

AGL and APA are committed to transparency in relation to availability of compliance monitoring data once the Project is operational. AGL and APA would work with relevant stakeholders to assess the best approach to providing monitoring data which could include establishment of a Community Reference Group (or similar) to convene at specified intervals once the facility is operating.

## 25.9 Complaints management

AGL and APA and their contractors would develop a complaints procedure and maintain complaints registers in accordance with AS/NZS 10002:2014 'Guidelines for Complaints Management in Organisations'. The complaints procedure would cover matters including:

- recording of complaints regarding environmental performance in AGL and APA's and contractors' registers
- investigation and close out process, including timeframes for responding to complaints
- reporting and escalation requirements.

## 25.10 Contingency measures

AGL and APA and their contractors would have in place contingency measures to facilitate an efficient and effective response to unexpected environmental events that could arise during Project construction and operation. Events for which contingency measures would be prepared include (but are not limited to):

- the discovery of previously unidentified Aboriginal cultural heritage or historic heritage objects or places (see MM-HH02)
- hazardous chemicals, fuel or waste spills (see mitigation measure MM-HR07)
- emergency shutdown of abnormal operation conditions (see mitigation measure MM-HR03)
- liquid fires and gas fires within the Gas Import Jetty Works (see mitigation measure MM-HR04)
- exceedance of predicted or recorded construction noise beyond noise management levels (see mitigation measure MM-NV04)
- encountering unexpected threatened fauna species during construction (see mitigation measure MM-FF08 and MM-FF09)
- the discovery of unexpected legacy contamination and contaminated material(s) (see mitigation measures MM-C02, MM-C03 and MM-C07).

Contractor CEMPs and OEMPs would be required to include appropriate contingency measures to address identified environment, social and safety risks during construction and operation of the Project.

THIS PAGE HAS BEEN INTENTIONALLY LEFT BLANK