- Describe contingency measures for responding to unexpected impacts resulting from waste management or discharges.

5. Environmental management framework

Inadequate management of environmental effects during project construction, operation and site reinstatement could result in a failure to meet statutory requirements or sustain stakeholder confidence.

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.

The EMF should describe the baseline environmental conditions to be used to monitor and evaluate the residual environmental effects of the project, as well as the efficacy of applied environmental management and contingency measures. The framework should include the following.

- The context of required approvals and consents, including any anticipated requirements for related environmental management plans, whether for project phases or elements.
- The proposed environmental management system to be adopted.
- organisational responsibilities and accountabilities for environmental management.
- 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).
- The environmental management measures proposed in the EES to address specific issues, including commitments to mitigate adverse effects and enhance environmental outcomes.
- The proposed objectives, indicators and monitoring requirements, including for managing or addressing:
  - social outcomes and community engagement;
  - biodiversity values, including offsets;
  - maintenance of the ecological character of the Western Port Ramsar site;
  - groundwater and surface water quality, surface water flow and groundwater regimes;
  - solid and liquid waste, including recycling and handling of potentially hazardous or contaminated waste, PASS and other excavated spoil;
  - noise, vibration, and emissions to air, including dust and greenhouse gases;
  - Aboriginal and historic cultural heritage values;
  - traffic during construction, including managing temporary disruption and changed accessibility;
  - disruption of and hazards to existing infrastructure;
  - site reinstatement, including handling of topsoil; and
  - emergency management.
- 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.
- 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.
- Procedures for auditing and reporting of performance including compliance with statutory conditions and standards.

The EMF should outline the relevant environmental management plans for construction, operation and rehabilitation phases of the project. Equally, the EMF should detail a program for community consultation, stakeholder engagement and communications during the construction, operation and rehabilitation of the project, including opportunities for local stakeholders to engage with the proponent to seek responses to issues that might arise when the project is undertaken.

APPENDIX A

<<Insert procedures requirements here>>

Attachment 1

DECISION ON PROJECT: Gas Import Jetty Facility and Crib Point to Packenham Gas Pipeline

Decision under section 8B(3)(a) of the *Environment Effects Act 1978*

Assessment though an environment effects statement (EES) under the *Environment Effects Act 1978* **is required** for the reasons set out in the attached Notice of Reasons for Decision.

Procedures and requirements under section 8B(5) of the *Environment Effects Act 1978*

The procedures and requirements applying to the EES process, in accordance with both section 8B(5) and the *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978* (Ministerial Guidelines), are as follows.

(i) The EES is to document the investigation, avoidance and minimisation of potential environmental effects of the proposal and relevant alternatives, as well as associated environmental mitigation and management measures. The EES should address:

a. effects on biodiversity and ecological values within and near the proposed pipeline and gas import facility at Crib Point, including potential impacts associated with the loss of native vegetation, indirect and direct impacts on the habitat for listed threatened species of flora and fauna, and risks to other ecological values and ecosystem services of conservation areas, nature parks, marine reserves and Ramsar sites in proximity to the proposal;

b. effects from seawater intake to and cold water/residual chlorine discharges from the gas import jetty facility, including potential medium and long-term effects on the ecology of the North Arm of Western Port associated with changes to seawater quality and entrainment of larvae of marine species (threatened and non-threatened);

c. effects from construction on surface water environments, including local waterways and the broader catchment, as well as groundwater (hydrology, quality, uses and dependent ecosystems), including risks associated with potential acid sulphate soils;

d. effects on the landscape values and land-uses of the sites and surrounding areas, including the implications for any directly affected agriculture and the proposed rehabilitation of the pipeline corridor;

e. effects on soil and land-uses from contamination during the construction and operation of the proposal;

f. effects on Aboriginal and historic cultural heritage values;

g. effects of project construction and operation on air quality and noise on nearby sensitive receptors (in particular residences);

h. effects on socio-economic values, at local and regional scales, potentially generated by the project, including increased traffic movement and indirect effects of the project construction workforce on the capacity of local community infrastructure; and

i. effects of waste (solid, liquid and gas) that might be generated by the project during construction and operation.

(ii) The matters to be investigated and documented in the EES will be set out in detail in scoping requirements prepared by the Department of Environment, Land, Water and Planning (the department). Draft scoping requirements will be exhibited for 15 business days for public comment, before being finalised and then issued by the Minister for Planning.

(iii) The level of detail of investigation for the EES studies should be consistent with the scoping requirements issued for this project and be adequate to inform an assessment of the potential environmental effects (and their acceptability) of the project and any relevant alternatives, in the context of the Ministerial Guidelines.

(iv) The proponent is to prepare and submit to the department a draft EES study program to inform the preparation of scoping requirements.

(v) The department is to convene an inter-agency technical reference group (TRG) to advise the proponent and the department, as appropriate, on scoping and adequacy of the EES studies during the preparation of the EES, as well as coordination with statutory approval processes.

(vi) The proponent is to prepare and submit to the department its proposed EES consultation plan for engaging with the public and stakeholders during the preparation of the EES. Once completed to the satisfaction of the department, the consultation plan is to be implemented by the proponent, having regard to advice from the department and the TRG.

(vii) The proponent is also to prepare and submit to the department its proposed schedule for the studies, preparation and exhibition of the EES, following confirmation of draft scoping requirements. This is to enable effective management of the EES process on the basis of an agreed alignment of the proponent's and department's schedules, including TRG review of technical investigations and the EES documentation.

(viii) The proponent is to apply appropriate peer review and quality management procedures to enable the completion of EES studies and documentation to an acceptable standard.

(ix) The EES is to be exhibited for a period of 30 business days for public comment, unless the exhibition period spans the Christmas–New Year period, in which case 40 business days will apply.

(x) An inquiry will be appointed under the *Environment Effects Act 1978* to consider and report on the environmental effects of the proposal.

Notification

The following parties (proponent and relevant decision-makers) are to be notified of this decision in accordance with sections 8A and 8B(4) of the *Environment Effects Act 1978*.

- AGL Wholesale Gas Limited and APA Transmission Pty Limited (proponent)
- Minister for Energy, Environment and Climate Change
- Secretary of the Department of Environment, Land Water and Planning
- CEO of the Environment Protection Authority
- Mayor of Mornington Peninsula Shire Council
- Mayor of City of Casey
- Mayor of Cardinia Shire
- Executive Director Aboriginal Victoria
- Executive Director Heritage Victoria

HON RICHARD WYNNE MP
Minister for Planning

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AGL Wholesale Gas Limited and APA Transmission Pty Limited

08-Nov-2018

Study Program

Gas Import Jetty and Pipeline Project

Study Program

Gas Import Jetty and Pipeline Project

Client: AGL Wholesale Gas Limited and APA Transmission Pty Limited

ABN: 0000

Prepared by

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Prepared by s47F

Reviewed by s47F

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	24-Oct-2018	Preliminary draft	s47F Associate Director	
B	07-Nov-2018	Draft	s47F Technical Director	
C	08-Nov-2018	Final	s47F Technical Director	

Table of Contents

1.0 Introduction

1.1 Study Program context

On 8 October 2018 the Minister for Planning determined that the AGL Gas Import Jetty Facility and the APA Crib Point to Pakenham Pipeline projects require an Environment Effects Statement (EES) under the Environment Effects Act 1978 (EE Act).

This decision was based on respective referral forms, supporting technical studies for each of the two related projects, and assessment of the relevant overall potential cumulative direct and indirect impacts from the pipeline and import jetty projects (as a whole).

While the projects are being assessed together, each would be constructed, owned and operated by different companies (see below). For the purposes of the EES, the two projects will be referred to collectively as 'the Project'. The EES will also separately identify the 'Jetty Project' and the 'Pipeline Project' (where necessary), as each project has specific environmental impacts given their different characteristics and spatial locations (for example, the Pipeline Project primarily has terrestrial impacts whilst the Jetty Project primarily has marine impacts), as well as different technical considerations.

The Proponent

The proponent for this project is made of up two companies, AGL Wholesale Gas Limited (AGL) and APA Transmission Pty Ltd (APA), delivering the Jetty Project and the Pipeline Project respectively.

AGL is part of the AGL group and has over 180 years history in the energy industry, operating across the supply chain with investments in energy retailing, thermal electricity generation and renewable projects. It owns and operates two gas storage facilities – Newcastle Gas Storage and Silver Springs Gas Storage Facility and is one of Australia's largest retailers of gas and electricity with more than 3.6 million customers in Victoria, New South Wales, South Australia, Western Australia and Queensland.

APA operates and maintains 15,000 kilometres of natural gas pipelines across mainland Australia. It is the owner of gas storage facilities, gas-fired power stations and wind farms, with extensive 'in-house' expertise in pipeline and facility design and construction, planning and environmental management.

1.2 Project purpose

The purpose of the project is to facilitate the development of a new source of liquefied natural gas (LNG) supply into south-eastern Australia. The new LNG supply would then be available, following regasification, for supply as high-pressure gas into the eastern Australian gas market.

This project would play an important role in the gas market, in three ways:

1. Liquidity - Additional supply from a new supply source would have the effect of capping gas prices at international LNG prices and keep downward pressure on prices – historically, we have seen prices in Victoria and New South Wales exceed international LNG prices at times of scarcity, for example in on 13 July 2016 we saw gas spot prices at the unprecedented level of $43.55/GJ (6am price) due to a shortage of supply during that period. The Melbourne population is forecast to grow and continues to rely on gas for heating, hot water and cooking, the LNG import terminal would allow additional gas supply to be imported on a flexible basis to meet the needs of this population growth if required;
2. Security and reliability - Gas imports would provide a new source of supply in the market, providing additional storage capacity during times of short supply and additional emergency back-up supply, in addition to that supplied by the Iona Storage facility, developed to provide security of supply post the Longford explosion at the Exxon Mobil operated facility that occurred on 25 September 1998. At present 80% of Victoria's gas supply is provided by the Esso-BHP supply injected into the Longford to Melbourne Pipeline. While AGL's Project would also utilise the same pipeline to inject gas from Crib Point to Pakenham it would provide diversity of supply, reducing the existing single source supply risk that exists today and provide additional system stability and line pack services into the Victorian Transmission System.

3. Capacity and flexibility - Gas for peaking generation requires a different method of delivery. The market wants shaped gas or peak shaving gas, LNG imports are intended to give the National Electricity Market the gas supply it needs in the way it needs it and ultimately allows consumers to have a secure stable source of energy supply as the energy supply mix transitions to an increasing penetration of renewables. The Project also provides the ability to contract both short term supply and long term supply – and if the market needs further gas – the ability to bring spot cargos in at short notice. Gas would become a critical element in balancing the market at a time when there is a looming shortfall and the next tranche of gas to be developed is least able to carry the additional capital costs of providing gas supply flexibility and swing. Gas can and is playing a crucial role in providing stability to the electricity market and providing firm and flexible back-up electricity generation.

2.0 Project description

2.1 Project overview

The Project comprises a gas import facility at Crib Point, using a Floating Storage and Regasification Unit (FSRU) (the Jetty Project) and a high pressure gas pipeline between Crib Point and Pakenham to provide a connection to the existing high pressure gas pipeline network in Victoria (referred to as the Declared Wholesale Gas Market or the Victorian Transmission System (VTS)) (the Pipeline Project). The project would allow for the transportation of gas to customers in south-eastern Australia. A summary description of each project component is provided in the following sections.

2.2 AGL Gas Import Jetty (Jetty Project)

2.2.1 Floating Storage and Regasification Unit (FSRU)

The Jetty Project proposes to use a FSRU vessel continuously moored at Berth 2 of the Crib Point Jetty. LNG is proposed to be delivered to the facility by an LNG carrier double berthed directly adjacent to the FSRU.

The FSRU would store LNG at approximately -162°C in cryogenic storage tanks. The cold temperature keeps the LNG cargo in its liquid state until it is required for the gas network. Heat is required to return the LNG to a gaseous state, known as the ‘regasification process’.

The initial design for the FSRU proposed an ‘open loop’ system, which includes the use of seawater to regasify the LNG. As part of the EES process, further assessment of available regasification processes, including a ‘closed loop’ system, will be carried out as part of the assessment of alternative technologies.

A ‘closed loop system’, which includes the use of boilers for the regasification process instead of seawater, is proposed as a method to assist in mitigating any potential impacts to the marine environment when discharging the seawater following the regasification process under the ‘open loop’ system. The objective is to enable this system to be used initially to address any concerns about the potential impacts to the marine environment (and further studies are needed to confirm that the impacts are acceptable) and also, to enable this method to be used in conjunction with the open loop system to manage and mitigate any potential impacts.

Open Loop System

The preliminary design of the FSRU includes the supply of heat from seawater, which would be drawn into the FSRU through the vessel sea chest or dedicated ports in the hull and circulated through heat exchangers. The temperature drop from the seawater intake to the point of exit is estimated to be 7°C cooler than the ambient seawater temperature prior to mixing back to ambient temperature.

The regasification system consists of three regasification trains each capable of delivering 250 million standard cubic feet per day (mmscf/d) (a unit of measurement for gases). Each train when in operation would require a daily seawater intake volume of 150,000 m^3 (150ML/day). Depending on the quantity of gas required to meet market demand, the FSRU would typically operate with two regassification trains being up to 500mmscf/day with a daily seawater intake volume of 300ML/day. For gas volumes less than 250mmscf/day, the daily seawater intake volume would be 150ML/day. The FSRU is unlikely

to operate at maximum operating output of 750mmscf/day with a daily seawater intake of 450ML/day unless there was a requirement to fill short term supply shortfalls in the gas market.

To prevent the growth of marine organisms in the heat exchange system on the FSRU, the seawater intake would be subject to an electrolysis process (electric current through seawater) to produce chlorine and hypochlorite. The seawater discharged from the FSRU heat exchange process would contain short-lived residual chlorine at a concentration of 100 parts per billion or 0.1 mg/L at the point of exit and prior to any blending or decay.

Closed Loop

The closed loop system circulates a fresh water/glycol medium which is pre-heated by steam from the ship's boilers typically in a compact heat exchanger. This is similar to the submerged combustion vaporiser approach used on onshore terminals. This method uses a further 1% of the send out gas to heat the circulating fluid to vaporise the LNG i.e. a total consumption of 2.5%.

Open and closed loop system

The FSRU will be designed to use both open loop or closed loop systems to provide flexibility in the regasification process, to assist in minimising and mitigating potential impacts on the marine environment. As stated above, the objective is to enable the closed loop system to be used initially if there are any concerns about the potential impacts on the marine environment from seawater discharge (and further studies are needed to confirm that the impacts are acceptable) and also, to enable this method to be used to manage and mitigate any potential impacts during periods when there may be elevated levels of larvae and plankton present in Western Port.

On balance, the open loop system is the preferred method when taking into account the potential greenhouse gas emissions from the closed loop system. However, it is considered important to be able to potentially use a closed loop system to assist in managing and mitigating potential impacts on Matters of National Environmental Significance (MNES) (noting that whilst operating under the closed loop system, there would be no seawater discharge into Western Port).

Jetty Infrastructure

The existing concrete jetty at Crib Point (Figure 2) was constructed as part of BP's refinery infrastructure in the 1960s. The refinery closed in 1986 and the southernmost berth (Berth 2) at the jetty was decommissioned. The jetty is approximately 970 m in length (total), running west to east (approximately 530 m), with a berthing head running north to south (approximately 440 m).

Berth 1 was designed for ships up to 100,000 DWT. Berth 2 was originally designed for ships up to 20,000 DWT but was upgraded by the addition of supplementary mooring dolphins and assessed for vessels of 60,000 DWT.

The northern most berth (Berth 1) remains in operation for the import of liquid fuel by United, which operates the Berth 1 jetty head under a license from the PoHDA.

In consultation with the PoHDA, the pilots, the harbourmaster and the Victorian Regional Channels Authority (VRCA), Berth 2 at Crib Point was selected as the berthing location for the FSRU (Figure 3). Arriving LNG carriers would berth into the ebb tide facing north, with the cargo transfer occurring via the port side of the LNG carrier. LNG carriers would depart via the existing deep-water swing basin.

The infrastructure mounted on the Jetty (Jetty Infrastructure) includes high pressure gas unloading arms and a high pressure gas flowline. Gas would be discharged from the FSRU and then transmitted through the gas flowline, which would connect to a flange on the landside component to allow connection to the Pipeline Project. A firefighting system would also be installed to provide cooling and safe coverage for the wharf and wharf personnel.

Figure 1 View of Crib Point Jetty

Figure 2 View of Crib Point jetty from south east

Landside component of the Jetty Project

During construction, temporary construction laydown and vehicle parking areas would be established on the areas already cleared of vegetation within the landside component, which has been defined as the indicative landside disturbance footprint as shown in Figure 3.

The permanent infrastructure of the Jetty Project would consist of the flange and gas flowline as part of the Jetty Infrastructure located within the landside component of the Jetty Project, connecting to the Pipeline Project. The Jetty Infrastructure is also shown on Figure 3.

Figure 3 Jetty Project footprint

2.3 Crib Point Pakenham Pipeline (Pipeline Project)

Once construction of the Pipeline Project is complete, the natural gas from the FSRU birthed at Port of Hastings would be transferred to APA's Crib Point Receiving Facility. The high pressure gas pipeline would transfer the natural gas to the APA Pakenham Delivery Facility where it would be conditioned to maintain the operating parameters of the VTS before injection at a location on the Longford Dandenong Pipeline, east of Pakenham. The pipeline will be designed to be bi-directional, allowing for the future supply of gas to emerging communities along the route.

The Pipeline Project consists of the following:

- Approximately 56 km of high pressure gas transmission pipeline with a nominal diameter of 600mm, within a construction right-of-way of 30m in width and an operational easement of generally 15m in width;
- Two mainline valves (MLVs), which would be situated along the route of the pipeline. MLVs are provided to isolate the pipeline in segments for emergency management, maintenance, repair and/or operation;
- A cathodic protection system is to be provided via a combination of cross-bonds to existing cathodic protection system and the installation of an impressed current system, on current design and subject to obtaining necessary tenure, at either of the MLVs which would be determined during detailed design. The system would be designed to use both impressed current and sacrificial anodes;
- Crib Point Receiving Facility situated at landside of the Crib Point Jetty and including metering, pigging facility, nitrogen storage and injection, odorant plant, gas analysers and a vent stack;
- Pakenham Delivery Facility situated adjacent to the Pakenham East Rail Depot, which is within land owned by Public Transport Victoria and which includes a scraper station, filtration, metering, heating, pigging facility and a vent stack; and
- An underground scraper/delivery station on the Longford Dandenong Pipeline and the Bunyip to Pakenham Pipeline (collectively referred to as the Longford Dandenong Pipeline) where the proposed pipeline connects to them. This station, which would be within the area of the permanent easement, would consist of several fittings that would allow for the future connection of temporary pig traps to inspect the internal lining of the pipeline during operations.

The design life of the pipeline and pipeline valves and assemblies (excluding scraper traps) is 60 years. Other station equipment, piping fixtures and instrumentation have a design life of between 10 and 40 years and would require maintenance and replacement during the pipeline design life. With ongoing integrity management, and subject to appropriate commercial drivers, the operational life of the pipeline is expected to be longer.

2.4 Ancillary components

2.4.1 AGL Gas Import Jetty (Jetty Project)

Ancillary components required for the Jetty Project includes the temporary construction lay down requirements as described for the landside component and outlined in Figure 4 above.

2.4.2 Crib Point Pakenham Pipeline (Pipeline Project)

Access to the proposed construction right of way (ROW) would utilise existing roads as much as possible and, subject to landowner approval, existing access tracks within private land. A laydown area for the storage of pipe sections prior to them being delivered to the construction ROW would also be required.

These areas would be approved for use under relevant local planning schemes and not increase the environmental impacts of the Project. Any ancillary areas utilised as part of the Project would be

currently approved sites for the proposed use or would be restored to previous land uses and condition once construction is complete.

2.5 Construction

2.5.1 AGL Gas Import Jetty (Jetty Project)

There are minimal construction activities required for the FRSU component of the Project. The key construction activities relate to the construction of the Jetty Infrastructure as outlined below.

Preparatory Works (landside and jetty):

- Construction laydown area for temporary construction purposes only, including the storage of pipes, construction machinery and equipment
- Relocation of utility services
- Establishment of hard stand areas in pre-existing cleared areas
- Civil / site establishment works including the installation of temporary site fencing, storage areas and site offices/amenities
- Establishment of environmental controls such as fencing to cordon off no-go areas (vegetation) and bunding
- Service connections and relocations.

Installation of Jetty Infrastructure:

- New gas unloading arms
    - The installation of the unloading arms would be undertaken from the water using a barge with crane. Two loading arms would be mounted onto a prefabricated steel structure, grillage platform that would be anchored to the existing pier head deck. To allow the installation of the new unloading arms, a new gas manifold would be installed around the middle of the pier head.
- Gas flow line mounted to the jetty
    - Pipe lengths (18 m or 12 m lengths) would either be transported onto the jetty via crane and placed in position or alternatively placed in position by a barge and crane. The pipe lengths would be welded into position and attached to the jetty along a pipe rack.
    - The gas flow line from the jetty would connect to a flange within the landside component (to connect to the Pipeline Project's "End of Line facilities").
- Fire Fighting System
    - Currently, there is no firefighting capability on Berth 2. A firefighting system, similar to that on Berth 1, would be designed and installed to provide cooling and safe coverage for the wharf and wharf personnel. All pumping systems, fire towers and supporting platforms would be installed via a crane mounted barge.

2.5.2 Crib Point Pakenham Pipeline (Pipeline Project)

Pipeline construction is to comply with all relevant codes and standards including AS2885.1-2012: Pipelines – Gas and liquid petroleum (design and construction) (AS2885.1-2012) and the Australian Pipelines and Gas Association Code of Environmental Practice (APGA, 2017). The construction would also be guided by the environmental requirements to be specified in an Environmental Management Plan (EMP) to be prepared in compliance with the Pipelines Act and Pipeline Regulations 2017 and accepted by the Department of Environment, Land, Water and Planning prior to construction.

As identified above, the construction footprint would typically comprise a 30m wide pipeline construction ROW, as well as extra work space for temporary facilities to support construction. Extra work space and temporary facilities would include:

- Access tracks (upgrade of existing and construction of new);

- Additional work areas (e.g. vehicle turn-around points, additional work space for crossings, set up areas for alternate construction methodologies, stockpiling and storage areas); and
- Water supply tanks and temporary dams for storing water required for dust suppression and hydrostatic testing (pressure testing) of the pipeline.

The typical layout of the construction ROW is shown in Figure 5 for reference.

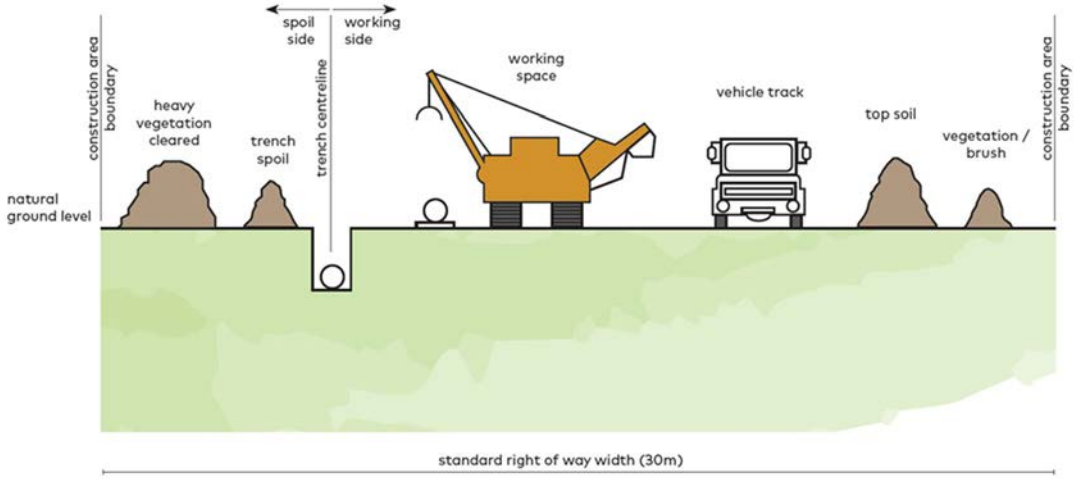

Figure 4 Typical Construction ROW layout for a pipeline

The width of the construction ROW may be reduced in areas such as sensitive environments and/or watercourses to minimise disturbance to these features. In some cases, due to the presence of areas of high ecological significance or other constraint, APA would utilise alternate construction techniques, such as Horizontal Directional Drilling (HDD) or boring, which would negate the need for construction disturbance within the area of the alternate method.

The construction ROW and all temporary facilities, temporary access tracks and extra work areas would be progressively decommissioned and reinstated on completion of the construction phase.

Pipeline construction would occur in the following sequence:

- Surveying of the construction ROW: Surveying works are undertaken to mark the extent of approved works areas and makers are placed along the proposed alignment to identify the pipeline centreline.
- Installation of temporary gateways: Temporary construction gateways would be installed at every fence line that is intersected by the construction ROW to provide security for farm stock during construction.
- Clearing of vegetation from the construction ROW: Clearing of vegetation within the construction ROW would be required to provide a safe and efficient area for construction activities.
- Pipe stringing and bending: Stringing involves distributing pipe segments along the ROW in preparation for welding. Where required, pipe lengths would be bent using a hydraulic bending machine to match changes in either elevation or direction of the alignment.
- Welding: Specialised construction crews would weld pipe segments together manually or using an automated welding process. Pipe segments would be welded into strings of up to approximately 1.5km in length, allowing for stock and landholder access breaks where required.
- Trench excavation: A wheel trencher, rocksaw or excavator would be used to dig the trench to lay the pipeline in. Trenches would typically be excavated to a depth of approximately 2m to achieve a depth of cover of 1.2m to the natural ground level. Topsoil and other excavated material would be stockpiled to the side of the trench area as it would be reused during backfilling activities.
- Lowering in and backfilling: the welded pipe strings would be lifted off skids and lowered into the trench using side-boom tractors. The pipe coating is inspected and tested for defects as each

welded pipe string is lifted. After lowering-in, the strings are welded together (a 'tie-in') in the trench.

- Testing and commissioning: The pipeline would be pressure tested prior to commissioning to ensure that the pipeline passes strength and leak tests. This is done through a process called hydrostatic testing whereby sections of the pipeline (test sections) are filled with water and then pressurised.
- Rehabilitation of the ROW: Shallow-rooted vegetation can be re-established across the entire ROW (e.g. cropping such as grain and fibre crops) although tall and deep rooted vegetation (e.g. mature trees) cannot, due to the potential to damage the pipeline and impede operational access requirements. Shallow-root cropping and grasslands re-establishment are encouraged and no long term impacts would be expected to land uses that rely on cropping and grazing primary production. Grass species and seeding requirements would be selected based on the desired final land use and in consultation with the landholder.

An illustrative summary of the key stages of pipeline construction is provided in Figure 5.

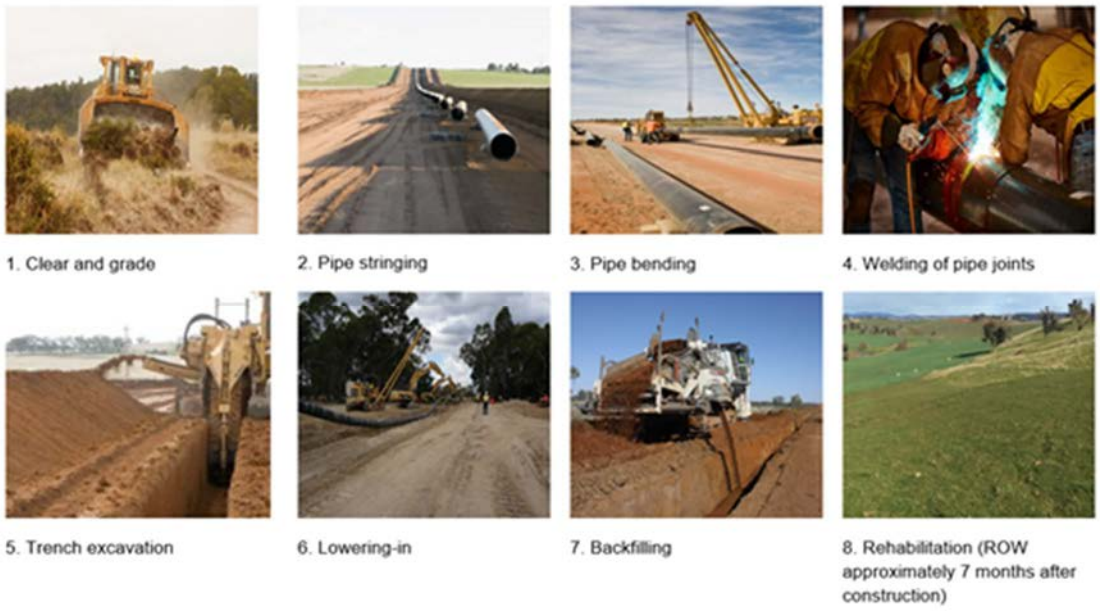

Figure 5 Pipeline construction sequence

In areas of constraint, such as major waterways, sites of ecological significance, third party services and major transport corridors, APA would employ alternate trenchless construction methods such as boring and horizontal directional drilling (HDD). These construction methods avoid impacts to the surface of the land and physical features that would otherwise result in significant disturbance and disruption to these features. The locations of trenchless construction have been preliminarily identified , with the final sites and their location subject to final engineering design. A typical HDD work area set up and layout is shown in Figure 6.

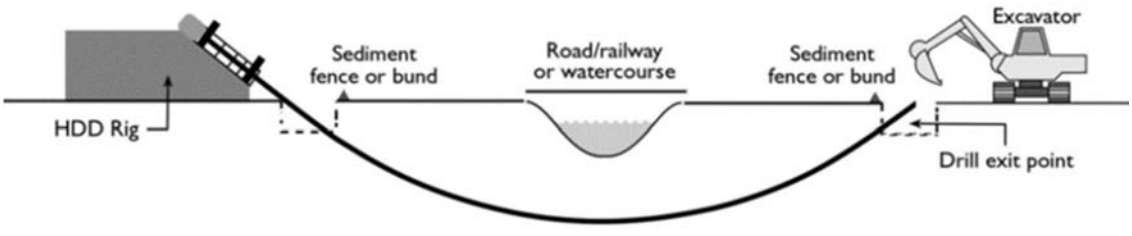

Figure 6 Typical HDD site set-up (APGA, 2017)

The HDD construction methodology would require the excavation of entry and exit pits, typically an approximate bell hole of 3m x 3m x 3m. As part of this process, a bore hole is drilled below the invert of the constraint being crossed from one side to the other and the pipe pulled back through the bore hole (refer to Figure 6).

The methodology for shallow horizontal boring (referred to as thrust boring or micro-tunnelling) involves construction of a horizontal bore hole for installation of a pipeline beneath sensitive surface features, roads and underground services. A typical set up for a thrust bored crossing is shown in Figure 7. Bell holes are excavated on both sides of the sensitive feature to the depth of the adjacent trench and graded to match the proposed slope of the pipeline and a boring machine operates within this bell hole to tunnel under the relevant constraint.

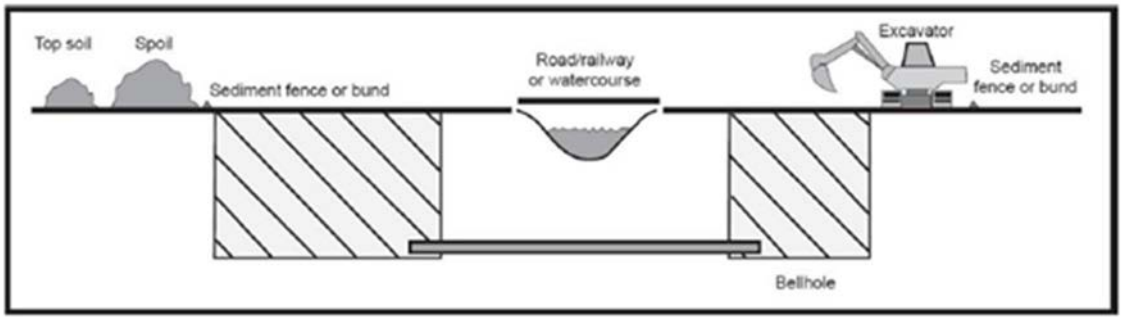

Figure 7 Typical thrust bore site set up (APGA, 2017)

Further detailed design may result in the addition of further trenchless crossings and the methods described as part of this application should be considered the minimum that would be employed as part of the construction of the Project. These additional trenchless crossings would be considered as part of minimising impact to land use and property management where additional constraints are identified as part of the ongoing engagement with owners and occupiers of land.

Construction of the two end-of-line pipeline facilities would be undertaken by specialist crews across key distinct phases of works. These include initial earthworks and civil construction, mechanical installation and electrical and instrumentation works. Construction of the pipeline facilities would take approximately 8-9 months to complete and they would be commissioned with the final tie-ins to the pipeline component prior to a hand-over to operational control.

2.6 Operation

2.6.1 AGL Gas Import Jetty Project (Jetty Project)

The Jetty Project key operational activities include:

- The FSRU to be continuously moored at Berth 2 of the Crib Point Jetty as shown in Figure 3. The FSRU will remain as an operational ship and able to be moved as required, such as in extreme weather events or for maintenance activities.
- A LNG carrier will transport LNG to the Crib Point Jetty and berth adjacent to the FSRU. LNG will be offloaded to the FSRU over a period of approximately 24 hours. The LNG carrier will then depart from alongside the FSRU.
- Delivered LNG will be procured from a range of suppliers in the Asia Pacific region and globally. LNG will be transferred from the LNG carrier to the FSRU by flexible hoses between the vessels, at a combined rate expected to be in the order of 8,000 to 11,000m^3/hr. LNG will be pressurised and then vaporised in a regasification system on board the FSRU to deliver high pressure gas to the jetty via high pressure gas unloading arms.
- The FSRU will store the LNG and re-vaporise it as required to meet demand. The FSRU will include a regasification process that takes in and returns seawater, manages boil off gas from the LNG cargo tanks, and will include power generation and the operation of four (4) reciprocating gas engines.

- The four (4) reciprocating gas engines on board the FSRU, will have a total capacity of 38.5MW and maximum fuel demand of 6.8 TJ/d used to provide all the power required on board for regasification operations, i.e. for driving the compressors, pumps, ventilation fans, general utility, etc. The engines will also provide electric power for propulsion of the FSRU.
- Boil off gas from the LNG cargo tanks within the FSRU will be compressed for recovery and use. Excess boil-off gas can be burned either in a disposal combustor or a minimum send out compressor installed to allow delivery of gas to the transmission network.
- The gas will be transferred from the FSRU via a high pressure flowline along Crib Point Jetty to a flange, which will connect to the End of Line facilities for the Pipeline Project.

The Jetty Project key operational activities include:

- The FSRU to be continuously moored at Berth 2 of the Crib Point Jetty as shown in Figure 3. The FSRU will remain as an operational ship and able to be moved as required, such as in extreme weather events or for maintenance activities.
- A LNG carrier will transport LNG to the Crib Point Jetty and berth adjacent to the FSRU. LNG will be offloaded to the FSRU over a period of approximately 24 hours. The LNG carrier will then depart from alongside the FSRU.
- Delivered LNG will be procured from a range of suppliers in the Asia Pacific region and globally. LNG will be transferred from the LNG carrier to the FSRU by flexible hoses between the vessels, at a combined rate expected to be in the order of 8,000 to 11,000m^3/hr. LNG will be pressurised and then vaporised in a regasification system on board the FSRU to deliver high pressure gas to the jetty via high pressure gas unloading arms.
- The FSRU will store the LNG and re-vaporise it as required to meet demand. The FSRU will include a regasification process that takes in and returns seawater, manages boil off gas from the LNG cargo tanks, and will include power generation and the operation of four (4) reciprocating gas engines.
- The four (4) reciprocating gas engines on board the FSRU, will have a total capacity of 38.5MW and maximum fuel demand of 6.8 TJ/d used to provide all the power required on board for regasification operations, i.e. for driving the compressors, pumps, ventilation fans, general utility, etc. The engines will also provide electric power for propulsion of the FSRU.
- Boil off gas from the LNG cargo tanks within the FSRU will be compressed for recovery and use. Excess boil-off gas can be burned either in a disposal combustor or a minimum send out compressor installed to allow delivery of gas to the transmission network.
- The gas will be transferred from the FSRU via a high pressure flowline along Crib Point Jetty to a flange, which will connect to the End of Line facilities for the Pipeline Project.

2.6.2 Crib Point Pakenham Pipeline (Pipeline Project)

Following the reinstatement of land as part of the pipeline construction, the land will be returned to its prior use. Excavating or erecting permanent structures or buildings over the buried pipeline will be prohibited in accordance with the requirements under the relevant legislation and pursuant to agreements with the landowners. Pipeline markers will be provided at fences, road crossings and other locations as required by AS2885.1-2012.

When commissioned, the pipeline will be owned and maintained by APA. Routine corridor inspections will be undertaken in accordance with APA procedures to monitor the pipeline easement for any operational or maintenance issues. The ongoing corridor inspections will address issues such as:

- Land stability (e.g. subsidence, erosion);
- Revegetation;
- Weed invasion;
- Cover at watercourse crossings; and

- Third-party activities.

The pipeline will also be designed and constructed so that in-line inspection equipment (known as intelligent pigs) can be used to inspect the integrity of the pipeline as required.

2.7 Decommissioning

2.7.1 AGL Gas Import Jetty (Jetty Project)

The Jetty Project life is anticipated to be approximately 20 years. However, it may be extended to address security and stability of gas supply to south eastern Australia. When the Project is complete, the FSRU would leave Western Port.

The upgraded jetty would remain as an operational jetty, under the ownership and management of PoHDA.

2.7.2 Crib Point Pakenham Pipeline (Pipeline Project)

The pipeline would be designed and built with a life span of 60 years; however it could operate for longer if the pipeline integrity is maintained. In the event that the pipeline is no longer required, it would be decommissioned in accordance with AS2885 and relevant legislative requirements at the time of decommissioning. The following options would be considered:

- Suspension: This would involve depressurising the pipeline, capping and filling with an inert gas such as nitrogen or water with corrosion inhibiting chemicals. The cathodic protection would be maintained to prevent the pipe corroding if water is used.
- Abandonment: This would involve disconnecting it from all sources and purging the pipeline natural gas with a non-flammable liquid. The pipeline may then be filled with water and left to corrode in –situ, filled with cementitious mud, or removed (generally only in built up areas this is done).

While both decommissioning options have potential for small scale localised and temporary environmental impacts, recovering the buried pipe could result in significant and avoidable environmental impacts. A detailed decommissioning or abandonment plan and rehabilitation program would be developed and implemented in consultation with landholders and the regulator at the relevant time.

2.8 Exclusions

There are a number of other separate proposed works / activities that are related to but not a direct ancillary part of the Project:

- Jetty Upgrade works are being undertaken by PoDHA, including the refurbishment of the existing Crib Point Jetty and construction of new mooring and berthing dolphins to provide an upgraded berth for shipping. A consent under the Coastal Management Act 1995 (Coastal Management Act consent) has been issued to the PoHDA for this work.
- Flattening of the seabed: The movement of vessels of various sizes through Western Port has resulted in the creation of a high spot on the seabed in the vicinity of the southern end of the existing Berth 2 wharf infrastructure. VRCA, as part of their routine maintenance activities for maintaining operation of the jetty, would be flattening the high spot. This is also required to accommodate ships like the FSRU and LNG carriers. A Coastal Management Act consent has been issued for this work.

3.0 Environmental assessment and approvals

3.1 Project Status

On 08 October 2018, the Minister for Planning stated that an EES is required for the APA Crib Point Pakenham Pipeline Project and AGL Gas Import Jetty Project, listing the following reasons:

- The project has the potential significant environmental effects, including on native vegetation, habitat of threatened terrestrial and aquatic species listed under Flora and Fauna Guarantee Act 1988, as well as risk to some aspects of the ecology in the North Arm of the Western Port Ramsar site.
- There are potential effects from construction and operation of the gas pipeline on water quality of waterways and the Western Port Ramsar site and on Aboriginal cultural heritage.
- While these potentially significant effect and other residual effects could be assessed and managed through a range of separate statutory processes, an EES is warranted to help ensure the proposals effects and relevant uncertainties are rigorously investigated as part of an integrated assessment process prior to any statutory approval decisions.

This Study Program has been prepared in response to the Ministerial requirements. It is acknowledged that the Study Program and technical studies that have commenced will need to incorporate any additional requirements that may arise from the EES Scoping process.

3.2 Project statutory approvals

Tables 3-1 and 3-2 set out the statutory approval, permit and licence requirements for the project. Requirements have been outlined separately for the Pipeline Project and the Jetty Project.

Table 3-1 Pipeline Project statutory approval, permit and licence requirements

Pipeline Project			
Legislation	**Authority**	**Approval/Permit/Licence**	**Requirement/Applicability**
Commonwealth regulatory requirements			
Environment Protection and Biodiversity Conservation Act 1999	Department of the Environment and Energy (DoEE)	Referral, and if applicable controlled action, assessment and approval under the EPBC Act	• Potential impacts on MNES • Proximity to Western Port Ramsar Wetland • Potential presence of EPBC listed species and communities
State regulatory requirements			
Aboriginal Heritage Act 2006	Aboriginal Victoria and Bunurong Land Council Aboriginal Corporation	Two (2) Cultural Heritage Management Plans	Approval of Cultural Heritage Management Plans, which are currently under preparation, by Aboriginal Victoria and Bunurong Land Council Aboriginal Corporation.
Catchment and Land Protection Act 1994	Port Phillip and Western Port Catchment Management Authority	-	Discussion with the Authority to understand management of noxious weeds and pest animals.
Country Fire Authority Act 1958	Country Fire Authority	Hot works permit	Permit to use fire in the open air, in support of operation of construction equipment in the

Pipeline Project			
Legislation	**Authority**	**Approval/Permit/Licence**	**Requirement/Applicability**
			open air during a total fire ban.
Marine and Coastal Act 2018	DEWLP	Consent	Consent of the responsible Minister for the use and development of coastal Crown land (including Crown land 200 metres inland of the high-water mark).
Fisheries Act 1995	DEWLP	Permit to take and move	A permit will be required under the FFG Act for salvage activities requiring the handling of threatened and common fish species and threatened aquatic invertebrates.
Flora and Fauna Guarantee Act 1988	DEWLP	Permit to take	Permits are required under the FFG Act for clearance of FFG Act listed species (Flora and Fauna) within Crown Land. This includes roadside and reserves such as Warringine Park.
Heritage Act 1995	Heritage Victoria	Permit to Damage	Consent to carry out works to a site listed on the Victorian Heritage Inventory under the Act, if relevant.
Local Government Act 1989	Local Government Authorities	Road Opening Permit	Works permit for construction across or beneath roads.
Pipelines Act 2005	DELWP	Pipeline Licence	Application and approval of a Pipeline Licence to allow for the construction and operation of the pipeline and associated pipeline facilities.
Planning and Environment Act 1987	City of Casey Cardinia Shire Council Mornington Peninsula Shire	Exemption from the need to obtain planning approvals	Section 85 of the Pipelines Act provides an exemption for permitting under the Act for the development and use of land for the purposes of the pipeline.
Rail Safety Act 2006	VicTrack	Third Party Access Approval	Works permit for construction across or beneath a railway.
Road Management Act 2004	VicRoads	Road Opening Permit	Permit to conduct works on or in a roadway including a Traffic Management Plan.
Water Act 1989	Melbourne Water Corporation	Works on waterways Permit	Works will be conducted across waterways and drains maintained and managed by Melbourne Water. Design and works approvals will be obtained from Melbourne Water to undertake the

Pipeline Project			
Legislation	**Authority**	**Approval/Permit/Licence**	**Requirement/Applicability**
			relevant construction activities at each of the waterways and drains.
Wildlife Act 1975	DEWLP – Port Phillip and Western Port	Management Authorisation Permit	The removal or salvage of indigenous vertebrate species (except declared a pest) listed under the FFG Act and some introduced fish under the Fisheries Act 1995.

Table 3-2 Jetty Project statutory approval, permit and licence requirements

Jetty Project			
Legislation	**Authority**	**Approval/Permit/Licence**	**Requirement/Applicability**
Commonwealth regulatory requirements			
Environment Protection and Biodiversity Conservation Act 1999	Department of the Environment and Energy (DoEE)	Referral, and if applicable controlled action, assessment and approval under the EPBC Act	• Potential impacts on MNES • Proximity to Western Port Ramsar Wetland • Potential presence of EPBC listed species and communities
State regulatory requirements			
Aboriginal Heritage Act 2006	Registered Aboriginal Party	Cultural Heritage Management Plan	CHMP required
Environment Protection Act 1970	EPA	Works Approval and Licence	Based on the current assessments, emissions of NOx CO and VOCs are predicted to exceed the thresholds prescribed for classification as a scheduled premises (Type L01 – general emissions to air). Consequently, under the Regulations the proposal meets the definition of a L01 (emissions to air) scheduled premises. A licence under the Environment Protection Act 1970 is required to regulate the discharge of these air emissions. The discharge of any water from the FSRU heat exchange process will also be regulated under a Works approval and Licence under the Environment Protection Act 1970, as applicable including the State Environment Protection

Jetty Project			
Legislation	**Authority**	**Approval/Permit/Licence**	**Requirement/Applicability**
Commonwealth regulatory requirements			
			Policy (Waters). In this regard, the works (installation of the FSRU) where a licence is required for the scheduled premises, requires a Works Approval under the Act.
Port Management Act 1995	PoHDA (Port Authority)	Port Authority approval required	Licence from PoHDA will be required for the Project under the Port Management Act 1995 for use of the berth to continuously moor the FSRU

3.3 Preliminary environmental assessments

A number of preliminary environmental assessments were conducted in order to identify potential environmental issues associated with each project. **Table 3-3** shows the assessments that were completed for the separate project referrals along with the proposed studies to be undertaken as part of the EES.

Table 3-3 Environmental assessments – completed and proposed

Studies	Referral		Environment Effects Statement proposed studies	
	Jetty	**Pipeline**	**Jetty**	**Pipeline**
Biodiversity - marine	•	–	✓	–
Biodiversity – terrestrial and freshwater	•	•	✓	✓
Hydrology and drainage	•	•	✓	✓
Hydrogeology	–	•	–	✓
Land use	•	•	✓	✓
Social impact	•	–	✓	✓
Traffic impact	–	–	✓	✓
Business impact	–	–	✓	✓
Agricultural impact	–	•	-	✓
Landscape and visual	•	•	✓	✓

Studies	Referral		Environment Effects Statement proposed studies	
Light spill impact	–	–	✓	✓
Contaminated land and sediments	•	•	✓	✓
Acid sulfate soils	•	•	✓	✓
Aboriginal heritage	–	•	✓	✓
Historic heritage	•	•	✓	✓
Air quality	•	–	✓	✓
Noise and vibration	•	•	✓	✓
Greenhouse gas assessment	•	•	✓	✓
Safety, hazard and risk	•	•	✓	✓

4.0 Approach to scoping the EES

4.1 Preliminary issues screening approach

This section of the draft study program presents the analysis of an issues screening tool that has been used to prioritise and focus the proposed investigations, assessment and approaches to avoiding, minimising or managing potential impacts as outlined in this document.

A risk based approach has been used to develop this study program in accordance with the requirements outlined in the 'Ministerial guidelines for assessment of Environmental Effects under the Environment Effects Act 1978' (page 14).

The issues screening is an evaluation of the potential environmental, social and economic issues associated with the project based on the information collected through a series of assessments already undertaken into the potential effects of the project.

The purpose of the issues screening tool is to assist in in identifying more significant issues and/or impacts that require more detailed assessment within the EES relative to those matters or potential impacts considered to be already well understood or less significant. While the screening tool has informed the development of the study program for the project, the EES will respond to the Scoping Requirements to be prepared by the Minister for Planning, which will be finalised following a period of public exhibition for comment.

The EES will include a detailed risk based assessment to assess the range of potential impacts and risks associated with the project.

4.2 Issues screening methodology

Information available on the environmental and/or social aspects potentially affected by the Project has been used to screen potential issues. A high (A), medium (B) or low (C) rating is assigned to potential issues, to identify whether issues require further investigation or assessment ('issues requiring assessment'), or whether the issues are already understood and require management ('issues requiring management') only.

Each potential impact pathway has been given a score (1, 2 or 3) against the categories of:

- Community and stakeholder interest
- Significance of assets, values and uses
- Potential impact (spatial, temporal and severity).

The scores are then added together to give a 'screening value' which is used to identify each issue as high, medium or low priority.

Issues that are prioritised as **A or B** are considered to require more detailed investigation and are therefore a priority for the EES.

The EES process encompasses assessments that respond to the scoping requirements and will involve additional empirical research, engagement with key regulators and community stakeholders to agree the scope of assessment, and detailed technical work to confirm the extent and severity of potential impacts and to explore ways of avoiding, minimising or managing impacts.

Issues that are prioritised as **C** are proposed to be documented and managed without significant further investigation or assessment in the EES.

The EES process will confirm the findings of the assessments already completed with relevant regulators and identify measures to avoid, minimise and manage these issues.

The issues screening method involved the following tasks:

- Review of relevant legislation and policy
- Review of existing impact assessment reports and available information

- Review of information arising from stakeholder consultation undertaken to date to identify stakeholder issues
- Identification of the potential interactions between the project components and key environmental assets, values and uses.

Risks, issues and potential impact pathways have been identified for both construction and operational phases of the project. Table 4-1 defines the criteria and consequence ratings that have been used to inform the issues screening.

Table 4-1 Issues screening criteria and consequence ratings

Rating	Community and stakeholder interest	Significance of assets, values and uses	Potential impact (spatial, temporal and severity)
1	Low interest and perceived impact	Locally significant asset, value or use	Potential for localised, temporary impact
2	Some interest and targeted perceived impacts	Regionally significant asset, value or use	Potential for significant temporary, or localised permanent impact
3	Broad community and stakeholder interest or impacts	State or nationally significant asset, value or use	Potential for significant permanent impact

The screening values are summed together to determine an assessment priority as shown in Table 4-2.

Table 4-2 Issue investigation categories

Screening score	Priority	Potential consequence	Complexity of mitigation	Type of study
7, 8 or9	'A'	Potential for elevated, longer term impacts, significant assets or values may be affected with enduring changes. Considers both impacts and benefits, or Issue may not be well defined and insufficient information is available for the impact assessment, or Higher level of community interest.	Complex and detailed management measures may be required	Further assessment required
5 or6	'B'	Potential for moderate level impacts, significant assets or values may be affected over an extended time frame with some resultant changes. Considers both impacts and benefits, or Issue may be moderately understood and some information is available, however more is required for the impact assessment, or Medium level of community interest.	Standard management measures are available that can be adopted with some tailoring	Further assessment required

Screening score	Priority	Potential consequence	Complexity of mitigation	Type of study
3 or 4	'C'	Potential for short term and localised impact. Asset or values may be temporarily affected but recovery expected, or Issue is well understood and there is enough information available for the impact assessment, or Lower level of community interest.	Standard management measures are available. Routinely managed on equivalent projects	Management of known issues required

4.3 Risk screening results

Table 4-3 and **Table 4-4** provide a summary of the key issues identified for the construction and post-construction (operation) phases of the project. The purpose of this screening is to inform the development of the EES study program and the technical study scopes.

Table 4-3 Risk screening (construction)

No.	Aspect	Potential impact pathway	Community and stakeholder perceived impacts	Significance of assets, values and uses	Potential impact (spatial, temporal and severity)	Score	Screening value
1	Safety, hazard and risk	Risks to the safety of the public during construction of the project	3	3	3	9	A
2	Biodiversity – marine	Impact on marine native flora and fauna (including threatened species) within or adjacent to the project area during construction	3	3	1	7	A
3	Biodiversity – terrestrial and freshwater	Impact on terrestrial native flora and fauna (including threatened species) within or adjacent to the project area during construction	2	3	2	7	A
4	Aboriginal heritage	Potential impact on known or previously unrecorded Aboriginal heritage values from construction activities	2	2	3	7	A
5	Surface water	Potential impact on surface water quality or flows during construction such as from disturbance of waterways, surface run-off, wastewater disposal and dewatering and temporary works in areas that may impede flows	2	3	1	6	B
6	Traffic and transport	Impacts from construction traffic (i.e. construction workforce, construction equipment movement) on road users	2	1	2	5	B
7	Agriculture	Potential impact on agricultural use and values of land during construction	2	1	2	5	B
8	Business	Potential impact on businesses during construction such as from disruption and changes to access	2	1	2	5	B
9	Acid sulfate soils	Potential impact on human health and environment from activation of acid sulfate soils	3	1	1	5	B
10	Landscape character and visual amenity impacts	Potential landscape character and visual amenity impacts during construction	3	1	1	5	B
11	Social	Potential impact on social amenity during construction	2	1	2	5	B
12	Noise and vibration	Impact of construction noise on local receptors	2	1	1	4	C
13	Air quality	Dust during construction	2	1	1	4	C
14	Land use	Potential impact on existing and proposed land uses during construction	1	1	2	4	C

No.	Aspect	Potential impact pathway	Community and stakeholder perceived impacts	Significance of assets, values and uses	Potential impact (spatial, temporal and severity)	Score	Screening value
15	Greenhouse gas	Greenhouse gas emissions during construction	2	1	1	4	C
16	Groundwater	Potential change in local groundwater levels impacting groundwater availability for GDEs, groundwater bore users and surface water	1	1	1	3	C
17	Contamination	Potential impact on human health and environment from interaction with contaminated soils	1	1	1	3	C
18	Historic heritage	Potential impact on known or previously unrecorded historic heritage values from construction activities	1	1	1	3	C
19	Light spill impacts	Potential light spill impacts on nearby receivers during construction	1	1	1	3	C

Table 4-4 Risk screening (operation)

No.	Aspect	Potential impact pathway	Community and stakeholder perceived impacts	Significance of assets, values and uses	Potential impact (spatial, temporal and severity)	Score	Screening value
1	Biodiversity – marine	Impacts on marine native flora and fauna (including threatened species) within or adjacent to the Ramsar site	3	3	3	9	A
2	Greenhouse gas	Greenhouse gas emissions during operation	3	3	3	9	A
3	Safety, hazard and risk	Risks to the safety of the public from the operation of the project	3	3	3	9	A
4	Biodiversity – terrestrial and freshwater	Impacts on terrestrial native flora and fauna (including threatened species) within or adjacent to the project area	2	3	2	7	A
5	Landscape character and visual impact	Landscape character and visual amenity impacts on local residents and other sensitive receivers from new fixed infrastructure	3	2	2	7	A
6	Light spill	Light spill impacts on nearby receivers during operation	3	2	2	7	A
7	Noise and vibration	Impacts of operational noise on local receptors	3	2	2	7	A
8	Surface water	Potential impacts on surface water quality or flows (including to the Ramsar sites) during operation such as from disturbance of waterways and surface run-off	2	3	1	6	B
9	Traffic and transport	Impacts from operational traffic (i.e. operational workforce, delivery vehicle movement) on road users	2	2	2	6	B
10	Air quality	Dust / point source emissions during operations	2	2	2	6	B
11	Social	Potential impacts on social amenity during operation	2	2	2	6	B
12	Land use	Potential impacts on existing and proposed land uses during operation	2	1	2	5	B
13	Aboriginal heritage	Potential impact on known or previously unrecorded Aboriginal heritage values from operational activities	2	2	1	5	B
14	Agriculture	Potential impacts on agricultural use and values of land during construction	2	1	2	5	B
15	Business	Potential impacts on businesses during operation such as from disruption and changes to access	2	1	1	4	C
16	Groundwater	Potential change in local groundwater levels impacting groundwater availability for GDEs, groundwater bore users and surface water	1	2	1	4	C
17	Contamination	Potential impacts on human health and the environment from interaction with contaminated soils	1	1	1	3	C

No.	Aspect	Potential impact pathway	Community and stakeholder perceived impacts	Significance of assets, values and uses	Potential impact (spatial, temporal and severity)	Score	Screening value
18	Acid sulfate soils	Potential impacts on human health and environment from activation of acid sulfate soils	1	1	1	3	C
19	Historic heritage	Potential impact on known or previously unrecorded historic heritage values from operational activities	1	1	1	3	C

5.0 Draft study scopes and methodologies

5.1 Proposed assessment objectives

The proposed assessment objectives for the project are shown in Table 5-1. The assessment objectives have been developed having regard to the decision of the Minister for Planning on the need for an EES and the studies prepared for the project referrals.

Table 5-1 Assessment objectives

Assessment objectives	Key legislation	Associated technical studies
Biodiversity - To avoid, minimise and/or offset potential adverse effects on native vegetation, listed threatened species and ecological communities, and listed migratory species, the Western Port Ramsar site, other protected flora, fauna and ecological communities and beneficial uses	EPBC Act; FFG Act; Wildlife Act; Pipelines Act	Marine ecology impact assessment Terrestrial and freshwater ecology impact assessment
Water, catchment values and hydrology – To minimise adverse effects on groundwater, surface water and floodplain environments and minimise effects on water quality and beneficial uses, protect surface water and groundwater resources and their beneficial and licensed uses, including downstream environmental values (including the Western Port Ramsar site) and users, over the short and long-term	EPBC Act; EP Act and SEPPs; Water Act; C and LP Act, SEPPs; Pipelines Act; M and C Act	Hydrology impact assessment Hydrogeology impact assessment
Socio-economic impact and land-use – To minimise potential adverse social, business and land use effects, with respect to effects on the local community, and to identify preferred opportunities for local businesses	P and E Act; CF and L Act; Pipelines Act	Land use impact assessment Social impact assessment Business impact assessment Traffic impact assessment Agricultural impact assessment
Landscape, visual and recreational values – To minimise adverse effects on landscape, visual amenity and recreational and coastal values associated with the environs of the project site	P and E Act, M and C Act	Landscape and visual impact assessment Light spill impact assessment
Contaminated land and sediments, acid sulfate soils – To prevent adverse environmental or health effects from disturbing, storing or influencing that transport / movement of contaminated or acid-forming material To minimise or avoid adverse effects associated with the generation of waste (solid, liquid and gas) by the project	EP Act, Water Act, P and E Act, C and LP Act, SEPPs and PEM	Contamination impact assessment Acid sulfate soils impact assessment
Heritage – To avoid or minimise adverse effects on Aboriginal and historic cultural heritage values	AH Act; Heritage Act	Aboriginal heritage assessment Historic heritage assessment

Assessment objectives	Key legislation	Associated technical studies
Environmental quality and amenity – To protect the health and wellbeing of residents and local communities, and minimise effects on air quality, noise, vibration and the social amenity of the area, having regard to relevant limits, targets or standards	EP Act, SEPPs and PEM; PHW Act; P and E Act	Air quality impact assessment
		Noise and vibration impact assessment
		Greenhouse gas impact assessment
Environmental management framework – To provide a transparent framework with clear accountabilities for managing environmental effects and hazards associated with site establishment, operation, rehabilitation, decommissioning and closure phases of the project, in order to achieve acceptable environmental outcomes	EPBC Act; EP Act; EE Act; Pipelines Act	Outcomes from a range of technical studies will inform the environmental management framework for the project
Safety, hazard and risk – To safely construct and operate the project in accordance with relevant regulatory requirements, to demonstrate risks have been identified and assessed (with the level of assessment proportionate to the significance and/or degree of potential impact within the context of the project), and to identify measures to avoid and minimise potential impacts of the project	Pipelines Act, Port Management Act 1995 (Port of Hastings Operating Handbook)	Safety, hazard and risk assessment

5.2 Technical study scopes for issues requiring further investigation

The tables below set out the proposed study scopes as requiring further detailed investigation to better understand the potential impacts to develop appropriate mitigation and management actions and strategies. These methodologies incorporate work that may already have been undertaken as part of the preliminary studies.

5.2.1 Biodiversity – Marine

Environmental issue:	**Biodiversity - Marine**	
Relevant project components:	**Jetty Project:**	**Pipeline Project:**
	Yes	No
Assessment objectives:	To avoid, minimise and/or manage potential adverse effects on native vegetation, listed threatened species and ecological communities, and listed migratory species, the Western Port Ramsar site, other protected flora, fauna and ecological communities and aquatic beneficial uses	
Key issues:	• Loss or degradation of threatened species or habitat • Potential impacts on Western Port Ramsar site values, ecological character or beneficial uses	
Type of investigation:	Desktop and field assessment	
High-level methodology:	• Characterise the existing marine and intertidal biodiversity values of the Jetty Project area, including native vegetation, aquatic flora and fauna and listed / threatened species and communities, including: - Baseline water and sediment quality, including temperature - Baseline benthic habitat and marine ecosystem, including seagrass - Presence and use of the site by marine and migratory birds including foraging sites and high tide roosts for shorebirds - Threatened Ghost Shrimp presence - Plankton and larval populations and seasonality. • Describe and evaluate potential and proposed design and construction mitigation methods to address effects on marine ecology values. • Assess the potential impacts and/or interactions of the Project on: - Ecological communities of conservation significance, including communities listed under the FFG Act or EPBC Act. - Flora and fauna species of conservation significance, including species listed under the FFG Act or EPBC Act. - Biodiversity values and ecological character of the Western Port Ramsar wetland site - Rare, threatened and protected species - Habitat areas within the project area - Fish populations and fisheries	

Environmental issue:	Biodiversity - Marine
	- Hydrodynamics of the North Arm of Western Port - Planktonic larval populations. • Identify appropriate avoidance, mitigation and management measures to minimise the impacts of the project on marine biodiversity.
Deliverables:	Marine ecology impact assessment A summary chapter of the EES
Peer review:	Will be required

5.2.2 Biodiversity – Terrestrial and Freshwater

Environmental issue:	Biodiversity – Terrestrial and Freshwater	
Relevant project components:	**Jetty Project:**	**Pipeline Project:**
	Yes	Yes
Assessment objectives:	To avoid, minimise and/or offset adverse effects on native vegetation, listed threatened species and ecological communities, and listed migratory species, the Western Port Ramsar site, and other protected flora, fauna and ecological communities.	
Key issues:	• Loss or degradation of threatened species or habitat • Potential impacts on Western Port Ramsar site environmental values.	
Type of investigation:	Desktop and field assessment	
High-level methodology:	• Characterise the existing biodiversity values of the Jetty and Pipeline Project area, including native vegetation, terrestrial and aquatic flora and fauna and listed/threatened and protected species and communities • Describe and evaluate potential and proposed design and construction mitigation methods to address effects on terrestrial ecology values • Assess the potential impacts of the project on: - Ecological communities of conservation significance, including communities listed under the FFG Act or EPBC Act. - Flora and fauna species of conservation significance, including species listed under the FFG Act or EPBC Act. - Biodiversity values and ecological character of the Western Port Ramsar wetland site - Rare, threatened and protected species - Habitat areas and wildlife corridors within the project area. - Aquatic species and ecological values of waterways, tributaries, drainage paths, floodplains and wetlands - Groundwater Dependent Ecosystems • Identify appropriate avoidance, mitigation and management measures to minimise the impacts of the project on terrestrial	

Environmental issue:	Biodiversity – Terrestrial and Freshwater
	biodiversity • Assess Net Gain requirements.
Deliverables:	Terrestrial and freshwater ecology impact assessment A summary chapter of the EES
Peer review:	To be confirmed

5.2.3 Water, catchment values and hydrology

Environmental issue:	Water, catchment values and hydrology	
Relevant project components:	**Jetty Project:**	**Pipeline Project:**
	Yes	Yes
Assessment objectives:	To protect surface water and groundwater resources and their beneficial and licensed uses including downstream environmental values (including the Western Port Ramsar site) and users, over the short and long-term	
Key issues:	• The potential for adverse effects on the functions, values and beneficial uses of surface water environments due to the project such as interception or diversion of flows or changed water quality or flow regimes during construction and operation • The potential for adverse effects on the functions, values and beneficial uses of groundwater due to the project, in particular on groundwater dependent ecosystems (GDEs) due to changes in groundwater levels, behaviour or quality • The potential for adverse effects on nearby and downstream water environments (including the Western Port Ramsar site) due to changed flow regimes, water quality changes or other waterway conditions during construction and operation	
Type of investigation:	Desktop and field assessment	
High-level methodology:	• Characterise the relevant surface water and catchment environments including in terms of the existing drainage functions and behaviour and existing water quality • Characterise the relevant groundwater environments, including the protected beneficial uses and values, existing drainage functions and behaviours with regard to the nearby wetlands such as the Western Port Ramsar site and identifying any Groundwater Dependent Ecosystems (GDE's) that might be affected by the project • Characterise the interaction between surface water and groundwater within the project site and the broader area • Characterise the physical and chemical properties of the project area groundwater in relation to key infrastructure • Identify potential and proposed design options and measures which could avoid or minimise significant effects on beneficial uses of surface water, groundwater and downstream water environments during project construction and operation	

Environmental issue:	Water, catchment values and hydrology
	• Identify methods to manage and dispose of groundwater during construction • Identify and evaluate effects of the project on groundwater and adjacent surface water environments near the projects works including: - The likely extent, magnitude and duration (short and long term) of changes to groundwater level or flow paths during construction and operation - Changes to groundwater and surface water quality during construction including from sedimentation and downstream effects on ecological values • Describe and evaluate the approach to monitoring and the proposed contingency measures to be implemented in the event of adverse residual effects on water environmental including water quality and catchment values requiring further management
Deliverables:	Hydrology and water quality impact assessment Hydrogeology impact assessment A summary chapter of the EES
Peer review:	Not required

5.2.4 Socio-economic impact and land-use

Environmental issue:	Socio-economic impact and land-use	
Relevant project components:	**Jetty Project:**	**Pipeline Project:**
	Yes	Yes
Assessment objectives:	To minimise potential adverse social, business and land use effects, with respect to effects on the local community, and to identify preferred opportunities for local businesses	
Key issues:	• Potential positive and negative social and economic impacts on local residents, industries, businesses, farmers and landholders • Compatibility of the project with existing land use patterns, trends and objectives, in the context of relevant strategies, policies and provisions of Planning Schemes • Potential impacts on social cohesion resulting from disruption of existing networks or adverse impacts on existing businesses or other recreational activities.	
Type of investigation:	Desktop and field assessment	
High-level methodology:	• Describe the characteristics of the existing communities in the vicinity of the project site, having regard to local and regional demographic, socio-economic and societal connection factors • Describe local and regional industry sectors including tourism and farming in the project area which could be directly or indirectly affected by the construction and/or operation of the project	

Environmental issue:	Socio-economic impact and land-use
	• Identify and consult with stakeholders that could be affected by the project • Assess potential social, local business, farming and land use impacts arising from the project • Describe and evaluate proposed measures to mitigate or manage potential adverse social, local business, farming and land use impacts, and assess opportunities from the project on the local community.
Deliverables:	Social impact assessment Business impact assessment Land use impact assessment Traffic impact assessment Agricultural impact assessment A summary chapter of the EES
Peer review:	To be determined

5.2.5 Landscape, visual and recreational values

Environmental issue:	Landscape, visual and recreational values	
Relevant project components:	**Jetty Project:**	**Pipeline Project:**
	Yes	Yes
Assessment objectives:	To minimise adverse effects on landscape, visual amenity and recreational and coastal values associated with the environs of the project site	
Key issues:	• The potential for adverse changes to the landscape character and visual amenity of the project vicinity from construction and operation of the project • Potential impacts on visual receptors from lighting required by the project during night-time operations • Short-term and potentially long-term effects on the landscape values and recreational values of the project vicinity.	
Type of investigation:	Desktop and field assessment	
High-level methodology:	• Characterise the visual character and associated landscape, amenity and recreational values of the project vicinity • Identify viewsheds in which the project features, including from nearby residences, public lookouts and key vantage points • Assess the effects of the project on: - Landscape and visual amenity values of the project vicinity, including public and private vantage points, having regard to visual changes and viewer perceptions - Recreational values in the vicinity of the project • Describe and evaluate proposed additional measures to mitigate or manage effects on landscape character, visual amenity and recreational values	
Deliverables:	Landscape and visual impact assessment (including light spill)	

Environmental issue:	Landscape, visual and recreational values
	A summary chapter of the EES
Peer review:	Not required

5.2.6 Contaminated land and sediments, acid sulfate soils

Environmental issue:	Contaminated land and sediments, acid sulfate soils	
Relevant project components:	**Jetty Project:**	**Pipeline Project:**
	Yes	Yes
Assessment objectives:	• To prevent adverse environmental or health effects from disturbing, storing or influencing that transport / movement of contaminated or acid-forming material • To minimise or avoid adverse effects associated with the generation of waste (solid, liquid and gas) by the project	
Key issues:	• Potential for adverse environmental or health effects resulting from disturbance of or influencing the transport / movement of contaminated sediment, soil or groundwater • Potential for adverse environmental or health effects resulting from handling, storage or transport of excavation contaminated spoil or potential acid sulfate soils • Potential for adverse environmental or health effects from other waste materials / streams generated from project works	
Type of investigation:	Desktop and field assessment	
High-level methodology:	• Identify likely occurrence of potential acid sulfate soils, contaminated soil and sediment and other potential sources of contaminated materials that may be altered or impacted by the project • Identify other key waste streams that may be generated by the project • Identify methods to manage the potential activation of potential acid sulfate soils and contaminated sediment and spoil during construction • Identify options for treating, reusing or disposal of spoil and / or waste with reference to the waste hierarchy • Identify and evaluate effects of potential acid sulphate soils and contaminated sediment and soil on environmental and human health values during construction • Identify and evaluate effects on environmental values from project construction waste streams • Describe principles to be adopted for monitoring management of spoil and other waste streams	
Deliverables:	Contamination and acid sulfate soils impact assessment A summary chapter of the EES	
Peer review:	Not required	

5.2.7 Heritage

Environmental issue:	Heritage	
Relevant project components:	**Jetty Project:**	**Pipeline Project:**
	Yes	Yes
Assessment objectives:	To avoid or minimise adverse effects on Aboriginal and historic cultural heritage values	
Key issues:	• Potential for adverse effects on known and unknown Aboriginal and non-Aboriginal cultural heritage values • Potential for permanent loss of significant heritage values	
Type of investigation:	Desktop and field assessment	
High-level methodology:	• Characterise the existing environment by undertaking desktop and field assessments to identify known heritage values, sites and areas of sensitivity within and adjoining the project area • Describe and evaluate potential and proposed design and construction mitigation methods to address effects on Aboriginal and historic cultural heritage values • Assess potential impacts on Aboriginal and historic cultural heritage values • Identify methods to manage risks of effects on Aboriginal and historic cultural heritage values including preparation of Cultural Heritage Management Plans (CHMP) to manage potential impacts in accordance with the Aboriginal Heritage Act 2006 and other permits as required	
Deliverables:	Aboriginal heritage impact assessment Historic heritage impact assessment A summary chapter of the EES CHMPs for approval	
Peer review:	Not required	

5.2.8 Environmental quality and amenity

Environmental issue:	Environmental quality and amenity	
Relevant project components:	**Jetty Project:**	**Pipeline Project:**
	Yes	Yes
Assessment objectives:	To protect the health and wellbeing of residents and local communities and minimise effects on air quality, noise and the social amenity of the area having regard to relevant limits, targets or standards	
Key issues:	• Potential for dust emissions from construction works and activities • Potential for increases in noise and vibration levels and lighting levels during project construction to affect sensitive receptors • Potential for increases in noise and lighting levels from project operation to affect sensitive receptors • Potential for increased emissions of greenhouse gases to	

Environmental issue:	Environmental quality and amenity
	result from the project
Type of investigation:	Desktop and field assessment
High-level methodology:	• Characterise the existing environment by undertaking desktop and field assessments (as required) to identify potential sensitive receptors and establish background levels of air quality, noise, lighting and vibration in the vicinity of the project area • Identify potential and proposed design and construction mitigation methods to manage significant effects for sensitive receptors, in the context of applicable policy and standards • Identify likely dust, noise, vibration and lighting impacts at sensitive receptors within and adjacent to the project area during construction and operation • Estimate direct and indirect emissions of greenhouse gases resulting from the project • Identify methods to manage other potentially significant effects on environmental quality or amenity
Deliverables:	Air quality impact assessment Noise and vibration impact assessment Greenhouse gas impact assessment (Note: Light spill impact assessment will be included in the Landscape and visual impact assessment) A summary chapter of the EES
Peer review:	Potentially for noise and vibration impact assessment. Not required for other reports.

5.2.9 Safety, hazard and risk

Environmental issue:	Safety, hazard and risk	
Relevant project components:	**Jetty Project:**	**Pipeline Project:**
	Yes	Yes
Assessment objectives:	To safely construct and operate the project in accordance with relevant regulatory requirements; • By demonstrating the risks have been identified and assessed (with the level of assessment proportionate to the significance and/or degree of potential impact, within the context of the project) • The measures that would be implemented to avoid and minimise the potential impacts of the project have been identified.	
Key issues:	• Potential for adverse safety or health effects resulting from construction and operation of the project (including off-site risks)	
Type of investigation:	Desktop and field assessment	
High-level methodology:	A Pipeline Safety Management Study in accordance with the	

Environmental issue:	Safety, hazard and risk
	pipeline design governing code - AS2885.1. The Pipeline Safety Management Study is a major source of assessing risks to the pipeline and forms the basis for resourcing requirements, protection measures and many of the systems and operational procedures that apply to safe operation of the Crib Point Pakenham Pipeline and associated facilities and minimising risks to the public, infrastructure and environment. This includes, but is not limited to, HAZOP, Fire Safety Assessment and Quantitative Risk Assessment (QRA) involving: • A detailed description of the methodology used and the investigations undertaken for the safety assessment • Identification of all hazards having the potential to cause a gas incident • Assessment of risks, including the likelihood and consequence of a gas incident • Physical and operational measures for management of identified risks For the Jetty Project, integrated hazards-related risk assessment and management will be conducted in accordance with the Port of Hastings Operating Handbook, specifically AS3846-2005, and other applicable legislative requirements. This process will include: • Hazard identification (HAZID) • Quantitative Risk Assessment (QRA) • Preliminary Fire safety study • Assessment of construction risks Measures to manage and mitigate identified risks
Deliverables:	Safety, hazard and risk assessment A summary chapter of the EES
Peer review:	Not required

5.3 Environmental management framework

Inadequate management of environmental effects during project construction, operation and site reinstatement could result in a failure to meet statutory requirements or sustain stakeholder confidence. The Project will describe a transparent Environmental Management Framework (EMF) for each of the components (the Jetty Project and the Pipeline Project) in the EES with clear accountabilities for managing and monitoring environmental effects and hazards associated with construction and operation phases of the project to achieve acceptable environmental outcomes.

The EMF will describe the baseline environmental conditions to be used to monitor and evaluate the residual environmental effects of the project, as well as the efficacy of applied environmental management and contingency measures. The EMF will include:

- The context of required approvals and consents, including any anticipated requirements for any related environmental management plans, whether for project phases or elements
- Any existing or proposed environmental management system (EMS) to be adopted
- Organisational responsibilities and accountabilities for environmental management
- How a register of environmental risks associated with the project is to be maintained during project implementation (including matters identified in preceding sections in the Scoping Requirements as well as other pertinent risks)
- The environmental management measures proposed in the EES to address specific issues, including commitments to mitigate adverse effects and enhance environmental outcomes
- The proposed objectives, indicators and monitoring requirements, including for (but not limited to) managing or addressing:
    - Social outcomes and community engagement
    - Biodiversity values, including offsets
    - Maintenance of the ecological character of the project site
    - Groundwater and surface water quality, surface water flow and groundwater regimes
    - Solid and liquid waste, including recycling and handling of potentially hazardous or contaminated waste, potential acid sulfate soil (PASS) and other excavated spoil
    - Noise, vibration, and emissions to air, including dust and greenhouse gases
    - Aboriginal and historic cultural heritage values
    - Traffic during construction, including managing temporary disruption and changed accessibility
    - Disruption of and hazards to existing infrastructure
    - Site reinstatement, including handling of topsoil
    - Emergency management
- 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
- The procedures for monitoring or verifying compliance with performance requirements and review of the effectiveness of the EMF for compliance and continuous improvement
- Procedures for auditing and reporting of performance including compliance with relevant statutory conditions and standards.

The EMF will also outline:

- The relevant environmental management plans for construction and operation phases of the project
- A program for community consultation, stakeholder engagement and communications during the construction and operation of the project, including opportunities for local stakeholders to engage with the proponent to seek responses to issues that might arise when the project is undertaken.

Each project component will be required to develop a standalone Environmental Management Plan which will based on the EMF developed as part of the EES.

To operate the FSRU a Works Approval under the EP Act will be required. An Environmental Management Plan for Jetty Project this will be developed as part of the Works Approval.

As part of the licence issued under the *Pipelines Act* 2005 to construct and operate the Pipeline Project, a construction and operational Environmental Management Plan will be prepared. The pipeline cannot be constructed or operated without an accepted Environmental Management Plan and Safety Management Plan.

Additionally, both the Jetty and Pipeline Projects will require approved Cultural Heritage Management Plans under the AH Act prior to commencing construction.

6.0 Communications and engagement strategy

6.1 Consultation Program

Item (vi) of the Decision under section 8B(3)(a) of the Environment Effects Act 1978 requires 'the proponent to prepare and implement an EES Consultation Plan for informing the public and consulting with stakeholders during the preparation of the EES.' The Project has prepared a Draft EES Consultation Plan for this project.

7.0 EES assessment and approvals schedule

7.1 EES assessments and approvals schedule

The key assessments and approvals program, commencing with the definition of each project area through to Ministerial approval for each project, is contained in the table below.

The current schedule does not include the associated chapters. The schedule for these is yet to be determined, although it is considered likely that chapters will be issued for review at the TRG subsequent to the TRG where the associated technical study was presented.

Table 7-1 Proposed TRG schedule

Objective	Technical studies	*TRG 0 Oct 2018	TRG 1 Jan 2019	TRG 2 Feb 2019	TRG 3 March 2019
N/A	Project description				
Heritage	Historic heritage assessment				
Landscape, visual and recreational values	Landscape and visual impact assessment				
Landscape, visual and recreational values	Light spill impact assessment				
Socio-economic impact and land-use	Agricultural impact assessment				
Environmental quality and amenity	Greenhouse gas impact assessment				
Water, catchment values and hydrology	Hydrology impact assessment				
Socio-economic impact and land-use	Traffic impact assessment				
Heritage	Aboriginal heritage assessment				
Socio-economic impact and land-use	Business impact assessment				
Environmental quality and amenity	Air quality impact assessment				
Environmental quality and amenity	Noise and vibration impact assessment				
Biodiversity – Terrestrial and freshwater	Terrestrial and freshwater ecology impact assessment				
Water, catchment values and hydrology	Hydrogeology impact assessment				
Biodiversity – marine	Marine ecology impact assessment				

Objective	Technical studies	*TRG 0 Oct 2018	TRG 1 Jan 2019	TRG 2 Feb 2019	TRG 3 March 2019
Contaminated land and sediments, acid sulfate soils	Contamination and acid sulfate soils impact assessment				
Socio-economic impact and land-use	Social impact assessment				
Socio-economic impact and land-use	Land use impact assessment				
Safety, hazard and risk	Safety management studies				
Environmental Management Framework	All				

**TRG 0 is proposed to be a commencement meeting to discuss project description, controls and deliverables*

FOI 190719
Document 3

s22

From: s22 (DELWP) <s22 @delwp.vic.gov.au>
Sent: Tuesday, 5 February 2019 6:19 PM
To: s22
Subject: RE: EPBC 2018/8298 - Gas Import Facility, Crib Point - referral decision [SEC=UNCLASSIFIED]

Thanks very much, s22 See you then. Best regards,

s22

s22 , **Senior Impact Assessor, Impact Assessment Unit, Statutory Planning Services**
Planning | Department of Environment, Land, Water and Planning

Level 7, 8 Nicholson Street East Melbourne Victoria 3002
T: 03 8392 s22 | **M**: s22 | **E**: s22 @delwp.vic.gov.au

From: s22 @environment.gov.au>
Sent: Tuesday, 5 February 2019 1:47 PM
To: s22 (DELWP) s22 @delwp.vic.gov.au>
Subject: RE: EPBC 2018/8298 - Gas Import Facility, Crib Point - referral decision [SEC=UNCLASSIFIED]

Hi s22
See attached our itinerary. See you Thursday!

Cheers,
s22

s22
A/g Assistant Director | Victoria & Tasmania Assessments

Environment Standards Division
Department of the Environment and Energy
GPO Box 787 Canberra ACT 2601
Ph: 02 6274 s22
E: s22

From: s22 @delwp.vic.gov.au [mailto:s22 @delwp.vic.gov.au]
Sent: Thursday, 13 December 2018 2:59 PM
To: s22 @environment.gov.au>
Cc: s22 @environment.gov.au>; s22 @environment.gov.au>; s22 s22 @environment.gov.au>; s22 @delwp.vic.gov.au
Subject: RE: EPBC 2018/8298 - Gas Import Facility, Crib Point - referral decision [SEC=UNCLASSIFIED]

Thanks very much, s22 - that week looks pretty clear for us at this distance. We'll let you know if anything changes - we might have a Technical Reference Group meeting for another project at some stage that week which s22 might have to attend, but we'll work around that if necessary. Enjoy the planning! Best regards,

s22

s22 | **Senior Impact Assessor |Impact Assessment Unit**
Planning | Department of Environment, Land, Water and Planning

Level 8, 8 Nicholson Street East Melbourne VIC 3002
T: 038392 s22 | **M**: s22 | **E**: s22

From: s22 @environment.gov.au>
To: "s22 @delwp.vic.gov.au" <s22 @delwp.vic.gov.au>
Cc: s22 @environment.gov.au>, s22 @environment.gov.au>, s22 s22 @environment.gov.au>
Date: 13/12/2018 02:45 PM
Subject: RE: EPBC 2018/8298 - Gas Import Facility, Crib Point - referral decision [SEC=UNCLASSIFIED]

Hi s22

I'm helping organise the trip down to Melbourne for the team. s22 and I just had a quick look at our calendars and we think that given both your and our availabilities in late January, and the craziness of the Christmas/New Year's period, it might be easier if we aim for a trip in **the week commencing 4 February** if that works for you? This will give us plenty of time to make all the necessary travel arrangements after the festive season.

Please let me know if that week suits you.

Kind regards,

s22

Graduate | Victoria & Tasmania Assessments
Assessments & Governance Branch
Department of the Environment and Energy
02 6274 s22 | s22 @environment.gov.au

From: s22
Sent: Thursday, 13 December 2018 1:55 PM
To: 's22 @delwp.vic.gov.au' <s22 @delwp.vic.gov.au>
Cc: s22 @delwp.vic.gov.au; s22 @environment.gov.au>; s22

s22 @environment.gov.au>; s22 @environment.gov.au>
Subject: RE: EPBC 2018/8298 - Gas Import Facility, Crib Point - referral decision [SEC=UNCLASSIFIED]

Great, good to know s22 . We'll let you know as soon as we long down a week/day.

From: s22 @delwp.vic.gov.au [mailto:s22 @delwp.vic.gov.au]
Sent: Thursday, 13 December 2018 1:53 PM
To: s22 @environment.gov.au>
Cc: s22 delwp.vic.gov.au
Subject: RE: EPBC 2018/8298 - Gas Import Facility, Crib Point - referral decision [SEC=UNCLASSIFIED]

Thanks, s22 - good news! If you want to go onto the existing jetty at Crib Point, we'll need to make arrangements in advance with Port of Hastings Development Authority - because it's an existing petroleum import jetty so subject to stringent security. We took the TRG down there a couple of weeks ago and they just had people to escort us on and make sure everyone was safe. So no problem about getting access as long as we know when.

We can also drive more or less along the proposed pipeline route, but there are places where it goes cross-country away from roads so we just have to intercept it where we can. The main areas likely to be of concern for you are where the route crosses watercourses flowing into the Ramsar site and where there's habitat for EPBC species - SBB, GGF and Dwarf Galaxias. But if there are particular spots you'd like to see additional to those, just let me know.

The week following Australia Day is likely to be pretty busy for me - we've scheduled a TRG meeting for AGL/APA which will be held in the city and which will probably take most of the day, and the Directions Hearing for the Mordialloc Bypass EES inquiry and advisory committee is likely to be held in that week also - not yet sure which day. But I'm around all of January so if the previous week (week commencing 21 January) works for you, that would be great.

Have a great Christmas and New year. Looking forward to seeing you in a few weeks!

Best regards,

s22

s22 **| Senior Impact Assessor |Impact Assessment Unit**
Planning | Department of Environment, Land, Water and Planning

Level 8, 8 Nicholson Street East Melbourne VIC 3002
T: 038392 s22 | **M**: s22 | **E**: s22 @delwp.vic.gov.au

From: s22 @environment.gov.au>
To: "s22 @delwp.vic.gov.au"' <s22 @delwp.vic.gov.au>
Date: 13/12/2018 01:22 PM
Subject: RE: EPBC 2018/8298 - Gas Import Facility, Crib Point - referral decision [SEC=UNCLASSIFIED]

Hi s22
In addition, we'll be looking at coming down to Melbourne probably late January and will among other things likely go and have a look at Crib Point. If you're available to attend that would be good. Happy to discuss further early Jan.

Cheers,
s22

From: s22 @delwp.vic.gov.au [mailto:s22 @delwp.vic.gov.au]
Sent: Wednesday, 12 December 2018 2:35 PM
To: s22 @environment.gov.au>
Subject: RE: EPBC 2018/8298 - Gas Import Facility, Crib Point - referral decision [SEC=UNCLASSIFIED]

No problem, s22 What I'll probably do is send you a copy of the advertised draft Scoping Requirements, which are still out for comment until next Wednesday, revised to include EPBC controlled action/ accredited assessment process text, and including a list of threatened species to be investigated specifically, derived from the correspondence announcing the controlled action decisions.

It will probably be late this week or early next week by the time I can send you that, but I expect I should be able to do so well before Christmas.

I'm expecting that we'll get a reasonably substantial public response to the advertised Scoping Requirements, with the bulk of submissions likely to arrive close to next Wednesday's closing date (and most likely a few late ones). By the time we analyse and collate responses, and work out what changes we want to recommend to the Minister, it will be well into the New Year. So there will be plenty of time for you to provide any suggestions about better ways of expressing the EPBC interests in the final document.

Best regards,

s22

s22 **| Senior Impact Assessor |Impact Assessment Unit**
Planning | Department of Environment, Land, Water and Planning

Level 8, 8 Nicholson Street East Melbourne VIC 3002
T: 038392 s22 | **M**: s22 | **E**: s22 @delwp.vic.gov.au

From: s22 @environment.gov.au>
To: "'s22 @delwp.vic.gov.au'" <s22 @delwp.vic.gov.au>
Cc: s22 @environment.gov.au>
Date: 11/12/2018 10:36 AM
Subject: RE: EPBC 2018/8298 - Gas Import Facility, Crib Point - referral decision [SEC=UNCLASSIFIED]

Hi s22
Will you be able to provide a copy of the scoping requirements before they are finalised so we can quickly scan over them to confirm they'll cover our matters before they get finalised?

If so, are you able to predict when that might be?

Happy to discuss,
s22

s22
A/g Assistant Director | Victoria & Tasmania Assessments

Environment Standards Division
Department of the Environment and Energy

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From: s22 @delwp.vic.gov.au [mailto:s22 @delwp.vic.gov.au]
Sent: Wednesday, 28 November 2018 5:41 PM
To: s22 @environment.gov.au>
Cc: s22 delwp.vic.gov.au; s22 delwp.vic.gov.au; s22 delwp.vic.gov.au; jane.homewood@delwp.vic.gov.au
Subject: Re: EPBC 2018/8298 - Gas Import Facility, Crib Point - referral decision [SEC=UNCLASSIFIED]

Thanks very much, s22 and for ringing this morning. We'll factor the decision and the controlling provisions including the nominated species into the finalisation of the Scoping Requirements. Best regards,

s22

s22 **| Senior Impact Assessor |Impact Assessment Unit**
Planning | Department of Environment, Land, Water and Planning

Level 8, 8 Nicholson Street East Melbourne VIC 3002
T: 038392 s22 | **M**: s22 | **E**: s22 delwp.vic.gov.au

From: s22 @environment.gov.au>
To: "'Jane.homewood@delwp.vic.gov.au'" <Jane.homewood@delwp.vic.gov.au>, "'Ees.Referrals@delwp.vic.gov.au'" <Ees.Referrals@delwp.vic.gov.au>
Cc: "s22 delwp.vic.gov.au'" <s22 delwp.vic.gov.au>, "'s22 delwp.vic.gov.au'" <s22 delwp.vic.gov.au>, "s22 delwp.vic.gov.au'" <s22 delwp.vic.gov.au>, "s22 delwp.vic.gov.au'" <s22 delwp.vic.gov.au>, 's22 delwp.vic.gov.au" <s22 delwp.vic.gov.au>
Date: 28/11/2018 03:24 PM
Subject: EPBC 2018/8298 - Gas Import Facility, Crib Point - referral decision [SEC=UNCLASSIFIED]

Dear Ms Homewood,
Please find attached notification of the referral decision (controlled action) for the proposed development of a gas import facility at Crib Point. The decision notice has been published on the Department's website.

I note that the bilateral agreement will apply, and I will be in touch with s22 directly about input into the scoping requirements for the EES.

Notification of the referral decision for the associated pipeline will come separately.

Happy to discuss,
s22

s22
A/g Assistant Director | Victoria & Tasmania Assessments

Environment Standards Division
Department of the Environment and Energy
GPO Box 787 Canberra ACT 2601
Ph: 02 6274 s22
E: s22 @environment.gov.au

[attachment "2018-8298-Referral-Decision-BRIEF-AttI-Letter-DELWP-signed.pdf" deleted by s22

s22 /Person/VICGOV1] [attachment "2018-8298-Referral-Decision-BRIEF-AttH-CA Notice-signed.pdf" deleted by s22 /Person/VICGOV1]

FOI 190719
Document 4

s22

From: s22 delwp.vic.gov.au
Sent: Wednesday, 19 December 2018 2:57 PM
To: s22
Cc: s22 s22
Subject: RE: Updating Crib Point scoping requirements [SEC=UNCLASSIFIED]

Thanks very much, s22 - we'll take all those suggestions into account in progressing towards the final form of the document. I don't think there's anything there that will cause us any grief. I will also put in some words about including a description of the proponents' environmental compliance performance/ track records.

We've received 21 submissions so far, and I expect we'll get more before the close of the public comment period later to-day, as well as a few late ones. We'll give people a couple of days' grace given how close we are to Christmas. I'll settle down to try to collate and analyse the submissions after Christmas and make whatever changes seem justified and value-adding. The Minister will be on leave through January up to Australia Day, so the objective will be to have the recommended final version and brief ready for his consideration and approval as soon as he is back on deck.

Best wishes to you and your colleagues for a safe and happy Christmas. Looking forward to working productively with you and the team on all of our various accredited assessment projects in 2019 (and there will be more to come, no doubt!). Best regards,

s22

s22 **| Senior Impact Assessor |Impact Assessment Unit**
Planning | Department of Environment, Land, Water and Planning

Level 8, 8 Nicholson Street East Melbourne VIC 3002
T: 038392 s22 | **M**: s22 | **E**: s22 delwp.vic.gov.au

From: s22
To: "'s22 delwp.vic.gov.au'"
Cc: s22 , s22
Date: 18/12/2018 01:42 PM
Subject: RE: Updating Crib Point scoping requirements [SEC=UNCLASSIFIED]

Hi s22
Thanks for sending this through. It looks good, I've made a few suggestions (in track and highlighted) in the attached version for your consideration. Let me know what you think.
Cheers,

s22
s22
A/g Assistant Director | Victoria & Tasmania Assessments

Environment Standards Division
Department of the Environment and Energy
GPO Box 787 Canberra ACT 2601
Ph: 02 6274 s22

E: s22 environment.gov.au
From: s22 delwp.vic.gov.au [mailto:s22 delwp.vic.gov.au]
Sent: Tuesday, 18 December 2018 12:05 PM
To: s22
Subject: Fw: Updating Crib Point scoping requirements
Dear s22

As promised, here is an updated version of the advertised draft scoping requirements for the AGL/ APA EES, with revised content reflecting your EPBC Act "controlled action" decisions included for your review. If you have any suggestions about refinements or additional content, please let me know and we can take that into account in finalising the scoping requirements.

We will paste the EPBC Act notices of decision into Appendices B and C respectively when we are publishing the final version as a pdf - apparently it's easier to do that way than trying to stick a pdf into a word document. I wouldn't know, I just operate within my limits!

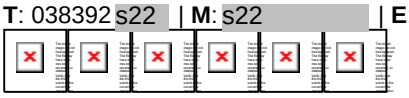
So far we've got ten submissions from the public, with the closing date for comments being tomorrow. But I'm expecting a bit of a surge in the last couple of days (and probably a few late ones as well).

Please let me know if any queries, s22 Thanks very much. Best regards,

s22

s22 **| Senior Impact Assessor |Impact Assessment Unit**
Planning | Department of Environment, Land, Water and Planning

Level 8, 8 Nicholson Street East Melbourne VIC 3002
T: 038392 s22 | **M**: s22 | **E**: s22 delwp.vic.gov.au



[attachment "2018-8298-EES Scoping-Crib Point EES scoping requirements 11 December 2018_.docx" deleted by s22 Person/VICGOV1]

Environment Effects Act 1978

Draft scoping requirements for the Gas Import Jetty and Pipeline Project Environment Effects Statement

NOVEMBER 2018

VICTORIA State Government | Environment, Land, Water and Planning

Accessibility

If you would like to receive this publication in an alternative format, please telephone the DELWP Customer Service Centre on 136186, email customer.service@delwp.vic.gov.au, or via the National Relay Service on 133 677 www.relayservice.com.au. This document is also available on the internet at www.delwp.vic.gov.au.

Public comments invited

Public comments are invited on these draft Scoping Requirements in relation to matters that should be investigated and documented as part of the environment effects statement (EES) process for the proposed Gas Import Jetty and Pipeline project.

A copy of the draft Scoping Requirements can be downloaded from the Department of Environment, Land, Water and Planning website at www.delwp.vic.gov.au/environmental-assessment.

The draft Scoping Requirements are open for public comment until 5:00pm on Thursday 19 December 2018.

Any comments received will be considered during the finalisation of the Scoping Requirements. Please note that any submissions on the draft Scoping Requirements will be treated as public documents.

Written comments should be posted to:
Impact Assessment Unit, Planning
Department of Environment, Land, Water & Planning
PO Box 500,
EAST MELBOURNE VIC 8002
or emailed to: environment.assessment@delwp.vic.gov.au

Queries about the Gas Import Jetty and Pipeline project itself should be directed to the proponent.

Queries about the Gas Import Jetty works should be directed to AGL:
Stuart Galway, Senior Manager - Land and Approvals, AGL
Telephone: 1800 039 600
Email: AGLCommunity@agl.com.au
Website: agl.com.au/agl-apa-environment-effects-statement

Queries about the Crib Point Pakenham Pipeline works should be directed to APA:
Marisa Feher, Project Licensing and Environmental Approvals Lead, APA Group
Telephone: 1800 531 811
Email: cribpointpakenham@apa.com.au
Website: agl.com.au/agl-apa-environment-effects-statement

Queries about the EES process and Draft Scoping Requirement should be directed to the department:
Impact Assessment Unit
Telephone: 03 8392 5470
Email: environment.assessment@delwp.vic.gov.au

List of Abbreviations

AGL	AGL Wholesale Gas Limited
APA	APA Transmission Pty. Limited
AH Act	*Aboriginal Heritage Act 2006*
CHMP	Cultural heritage management plan
C&LP Act	*Catchment and Land Protection Act 1994*
CF&L Act	*Conservation, Forests and Lands Act 1987*
CHMP	Cultural heritage management plan
DEPI	Department of Environment and Primary Industries
DELWP	Department of Environment, Land, Water and Planning
EE Act	*Environment Effects Act 1978*
EES	Environment effects statement
EMF	Environmental management framework
EMP	Environmental management plan
EMS	Environmental management system
EP Act	*Environment Protection Act 1970*
EPA Act	*Environment Protection Amendment Act 2018*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
FFG Act	*Flora and Fauna Guarantee Act 1988*
FSRU	Floating storage and regasification unit
GDE	Groundwater dependent ecosystem
km	kilometres
LNG	Liquified natural gas
m	metres
M&C Act	*Marine and Coastal Act 2018*
MNES	Matters of national environmental significance
PASS	Potential acid sulphate soils
P&E Act	*Planning and Environment Act 1987*
PH&W Act	*Public Health and Wellbeing Act 2008*
PoHDA	Port of Hastings Development Authority
RM Act	*Road Management Act 2004*
RAP	Registered Aboriginal Party
SEPP	State environment protection policy
TRG	Technical reference group

Contents

1. Introduction

In the light of the potential for significant environmental effects, on 8 October 2018 the Victorian Minister for Planning (the Minister) determined under the *Environment Effects Act 1978* that AGL Wholesale Gas Limited (AGL) and APA Transmission Pty. Limited (APA) (jointly acting as the proponent) must prepare an environment effects statement (EES) for the Crib Point Gas Import ~~Facility~~ Jetty and Pipeline project (the project). The project comprises the gas import ~~facility~~ jetty works, including the floating storage and regasification unit (FSRU), for which AGL is the primary proponent, and the pipeline (Crib Point to Pakenham) works, for which APA is the primary proponent. Further details on the sets of works that comprise the project are provided in section 1.1 below.

The purpose of the EES is to provide a sufficiently detailed description of the proposed project, assess its potential effects on the environment and assess alternative project layouts, designs and approaches to avoid and mitigate effects. The EES will inform, and seek feedback from, the public and stakeholders and enable the Minister to issue an assessment of the environmental effects of the project under the Environment Effects Act. The Minister's assessment will inform statutory decision-makers responsible for the project's approvals.

The draft scoping requirements for the project set out the specific matters to be investigated and documented in the EES. The Minister will issue final scoping requirements for the EES following consideration of public comments received on this draft.

1.1 The project and setting

AGL and APA propose to establish a new facility for importing and degasifying liquefied natural gas (LNG) and supplying it to the gas transmission network. The proposal comprises the gas import ~~facility~~ jetty works, which include upgrade/modification works to the existing jetty owned and operated by the Port of Hastings Development Authority (PoHDA) at Crib Point, to provide for continuous mooring of ~~a floating storage and regasification unit (~~the FSRU~~)~~ – a vessel with LNG storage and regasification capacity. LNG carriers (tankers approximately 300 m in length) will moor alongside the FSRU and transfer cargo to the FSRU. The proposal also comprises the pipeline works, which include treatment of the gas as necessary to meet relevant Australian standards and subsequent transfer via a new pipeline to a location east of Pakenham where its pressure would be corrected, specifications checked and modified if necessary, and connected to the existing gas transmission network for commercial supply to customers. The locations of the project components are shown in Figure 1.

Aside from the FSRU, the Gas i~~I~~mport ~~Facility~~ jetty works would also include ancillary topside jetty infrastructure including high pressure gas unloading arms and a high-pressure gas flowline, which will be mounted on the jetty and connected to a flange on land to allow delivery of the gas to the pipeline component of the project, ~~following~~ which will include any necessary treatment. Works for the pipeline would entail pipeline installation in an excavated trench, except where horizontal directional drilling would be used to avoid surface disturbance, such as at watercourses, major roads or other sensitive surface features. It would also include construction of above-ground pipeline facilities at Crib Point and Pakenham to check and correct gas specifications against commercial supply standards before delivering it into the existing gas pipeline network. The pipeline would extend for about 56 km and would occupy an operational easement generally about 15 m wide. Where available, it might share existing infrastructure easements.

Works for which statutory approvals already exist, including seabed levelling works near the jetty by the Victorian Regional Channels Authority and works being undertaken on the jetty by PoHDA, are not part of the project for the purposes of the EES.

1.2 Minister's requirements

The Minister's decision to require an EES included the procedures and requirements applicable to its preparation, in accordance with section 8B(5) of the Environment Effects Act (Appendix A). These requirements included the following key matters for the EES to examine:

- effects on biodiversity and ecological values within and near the proposed pipeline and gas import facility at Crib Point, including potential impacts associated with the loss of native vegetation, indirect and direct impacts on the habitat for listed threatened species of flora and fauna, and risks to other ecological values and ecosystem services of conservation areas, nature parks, marine reserves and Ramsar sites in proximity to the proposal;
- effects from seawater intake to and cold water/residual chlorine discharges from the gas import jetty facility, including potential medium and long-term effects on the ecology of the North Arm of Western Port associated with changes to seawater quality and entrainment of larvae of marine species (threatened and non-threatened);
- effects from construction on surface water environments, including local waterways and the broader catchment, as well as groundwater (hydrology, quality, uses and dependent ecosystems), including risks associated with potential acid sulphate soils;
- effects on the landscape values and land-uses of the sites and surrounding areas, including the implications for any directly affected agriculture and the proposed rehabilitation of the pipeline corridor;
- effects on soil and land-uses from contamination during the construction and operation of the proposal;
- effects on Aboriginal and historic cultural heritage values;
- effects of project construction and operation on air quality and noise on nearby sensitive receptors (in particular residences);
- effects on socio-economic values, at local and regional scales, potentially generated by the project, including increased traffic movement and indirect effects of the project construction workforce on the capacity of local community infrastructure; and
- effects of waste (solid, liquid and gas) that might be generated by the project during construction and operation.

The draft scoping requirements provide further detail on the specific matters to be investigated in the EES in the context of *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978* (Ministerial Guidelines).

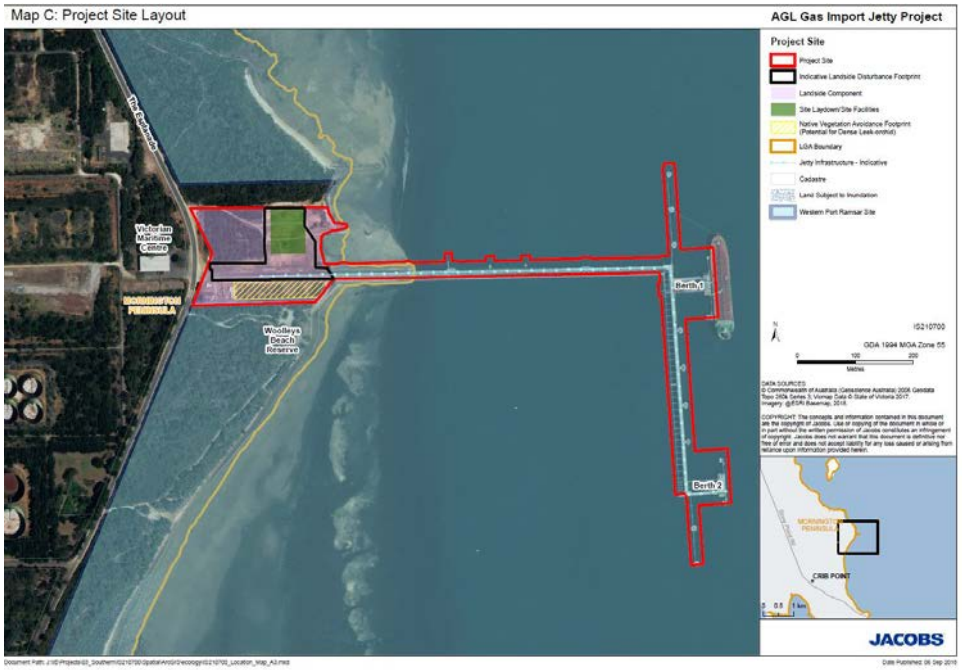


Fig 1A: Gas Import Jetty works location, Crib Point

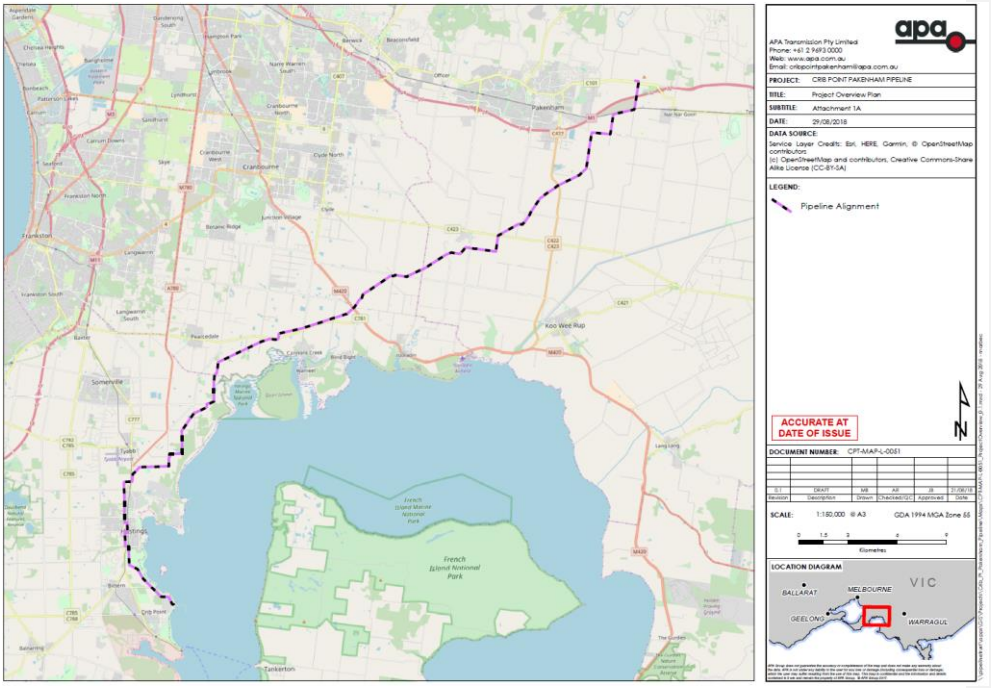


Fig. 1B: Location of proposed pipeline works between Crib Point and Pakenham.

2. Assessment process and required approvals

2.1 What is an EES?

An EES is prepared by the project's proponent to describe the project and its potential environmental effects. An EES should enable stakeholders and decision-makers to understand how the project is proposed to be implemented and the likely environmental effects of doing so. An EES has two main components.

1. The EES main report – An integrated, plain English document that sets out an analysis of the potential impacts of the project. The main report draws on technical studies, data and statutory requirements such as specific limits for surface water and groundwater quality and waste discharge to the environment and should clearly identify which components of the scope are being addressed throughout.
2. The studies that inform the EES technical reports on expert investigations and analyses that provide the basis for the EES main report. They will be exhibited in full, as appendices to the main report.

The potential impacts that require technical studies are set out in Section 4.

2.2 The EES process

The proponent is responsible for preparing the EES, including conducting technical studies and undertaking stakeholder consultation. The Department of Environment, Land, Water and Planning (DELWP) is responsible for managing the EES process. This EES process has the following steps:

- preparation of a draft study program and draft schedule by the proponent (yet to be completed);
- preparation and exhibition of draft scoping requirements by DELWP on behalf of the Minister (current step) with public comments received during the advertised exhibition period;
- finalisation and issuing of scoping requirements by the Minister;
- review of the proponent's EES studies and draft documentation by DELWP and a technical reference group (TRG)[1];
- completion of the EES by the proponent;
- review of the complete EES by DELWP to establish its adequacy for public exhibition;
- exhibition of the proponent's EES and invitation for public comment by DELWP on behalf of the Minister;
- appointment of an inquiry by the Minister to review the EES and public submissions received and provide a report to the Minister; and finally
- following receipt of the inquiry report, the Minister provides an assessment of the project inform for decision-makers.

Further information on the EES process can be found on the planning website[2].

Technical reference group (TRG)

DELWP has convened a TRG, comprised of representatives of relevant state government agencies and departments and relevant local council to advise it and the proponent on:

- applicable policies, strategies and statutory provisions;
- the scoping requirements for the EES;
- the design and adequacy of technical studies for the EES;
- the proponent's public information and stakeholder consultation program for the EES;
- responses to issues arising from the EES investigations;
- the technical adequacy of draft EES documentation; and
- coordination of statutory processes.

EES consultation plan

The proponent is responsible for informing and engaging the public and stakeholders to identify and respond to their issues in conjunction with the EES studies. Stakeholders include potentially affected parties, the local community and interested organisations and individuals, as well as government bodies. Under its EES consultation plan the proponent will inform the public and stakeholders about the EES process and

1. For critical components of the EES studies, peer review by an external, independent expert may be appropriate.
2. https://www.planning.vic.gov.au/#environmental_assessment.

associated investigations and provide opportunities for input and engagement during the EES investigations. The EES consultation plan is reviewed and amended in consultation with DELWP and the TRG before it is published on the planning website. The EES consultation plan will:

- identify stakeholders;
- characterise public and stakeholders' interests, concerns and consultation needs and potential to provide local knowledge and inputs;
- describe consultation methods and schedule; and
- outline how public and stakeholder inputs will be recorded, considered and/or addressed in the preparation of the EES.

Approvals coordination with the EES process

The project may require a range of approvals under Victorian legislation. DELWP coordinates the EES process as closely as practicable with the approvals procedures, consultation and public notice requirements. Figure 2 outlines the steps in the EES process and the parallel coordination of statutory processes.

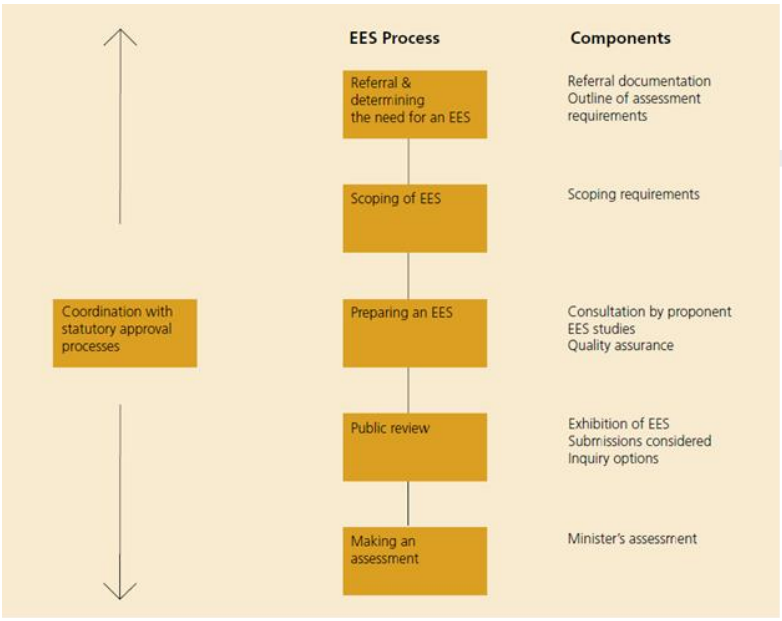


Figure 1: Coordination of statutory assessment and approvals processes

2.3 Accreditation of the EES process under the EPBC Act

AGL and APA also respectively referred the gas import facility works and the pipeline works to the Australian Government under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The delegate for the Commonwealth Minister for the Environment and Energy ~~has not yet~~ determined on 28 November 2018 that each ~~whether either~~ component of the project (the gas import jetty works and the pipeline works)is a 'controlled action', as it is likely to have a significant impact on matters of national environmental significance (MNES) which are protected under Part 3 of the EPBC Act, as described in Table 1.

Controlling provision	Gas import jetty works	Pipeline works
Wetlands of international importance	X	X

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EPBC Act sections 16 and 17B		
Listed threatened species and communities EPBC Act sections 18 and 18A	X	X
Listed migratory species EPBC Act sections 20 and 20A	X	

Table 1: Designated controlling provisions for project components.

~~If it is determined that the project is a controlled action, t~~The EES ~~will serve as the~~is an accredited assessment process under the EPBC Act through a Bilateral Assessment Agreement that exists between the Commonwealth and State of Victoria. The Commonwealth Minister or delegate ~~would~~ will decide whether the action~~s is~~ are approved, approved with conditions or refused under the EPBC Act, after having considered the Minister for Planning's ~~Assessment~~ assessment under the Environment Effects Act. Note that what are generally termed 'effects' in the EES process corresponds to 'impacts' defined in section 82 of the EPBC Act.

~~If the EES is to serve as the accredited assessment process for the purposes of the EPBC Act, appropriate changes will be made to the scoping requirements to address the controlling provisions of the EPBC Act identified in the 'controlled action' decision~~Conclusions regarding the specified MNES protected under the EPBC Act should be summarised in a separate chapter or section of the EES, which should include reference information about where within the EES relevant detailed discussion is provided.

3. Matters to be addressed in the EES

3.1 General approach

The EES should assess the environmental effects[3] of all components and stages of the project. The assessment should include:

- the likelihood of adverse effects and associated uncertainty of available predictions or estimates;
- the potential effects on individual environmental assets – magnitude, extent and duration of change in the values of each asset – having regard to intended avoidance and mitigation measures and (if different) both maximum operational capacity and intended operational rates;
- further management measures that are proposed where avoidance and mitigation measures do not adequately address effects on environmental assets, including specific details of how the measures address relevant policies;
- risk ratings of unintended but foreseeable events such as spills or other mishaps that could result from construction or operation of the project;
- the likely residual effects, including on MNES, that are likely to occur after all proposed measures to avoid and mitigate environmental effects are implemented; ~~and~~
- potential cumulative impacts (arising in conjunction with the impacts of other projects or actions that may affect the same environmental asset or assets; and
- an analysis of the acceptability of impacts on all MNES.

Further advice on the approach to be adopted in preparing the EES is provided in Section 4.

3.2 General content and style of the EES

The content of the EES and related investigations is to be guided by these scoping requirements and the Ministerial Guidelines. To facilitate decisions on required approvals, the EES should address statutory requirements associated with approvals that will be informed by the Minister's Assessment, including relevant decision-making under the EPBC Act. The EES should also address any other significant issues that emerge during the investigations.

Ultimately it is the proponent's responsibility to ensure that adequate studies are undertaken and reported to support the assessment of environmental effects and that the EES has effective internal quality assurance in place. Close consultation with DELWP and the TRG during the investigations and preparation of the EES will be necessary to minimise the need for revisions prior to authorisation of the EES for public exhibition.

The main EES report should provide a clear, well-integrated analysis of the potential effects of the proposed project, including proposed avoidance, mitigation and management measures, as well as relevant alternatives. Overall, the main report should include the following:

- an executive summary of the potential environmental effects of the project, includingpotential impacts on identified MNES outlined in section 4 below;
- a description of the entire project, including its objectives, rationale, key elements, associated requirements for new infrastructure and use of existing infrastructure;
- a description of the approvals required for the project to proceed, and its relationship to relevant policies, strategies, guidelines and standards;
- a description of relevant alternatives capable of substantially meeting the project objectives that may also offer environmental or other benefits (as well as the basis for the choice where a preferred alternative is nominated);
- descriptions of the existing environment, where this is relevant to the assessment of potential effects;
- relevant maps, plans, diagrams and technical information – maps and diagrams must be clearly annotated, in colour and high resolution, and relevant features including EPBC matters clearly labelled;

3. Effects include direct, indirect, combined, cumulative, consequential, short and long-term, beneficial and adverse effects.

- appropriately detailed assessments of potential effects of the project (and relevant alternatives) on environmental assets and values, relative to the "no project" scenario, together with an estimation of likelihood and degree of uncertainty associated with predictions;
- intended measures for avoiding, minimising, managing and monitoring effects, including a statement of commitment to implement these measures;
- predictions of residual effects of the project assuming implementation of proposed environmental management measures;
- any proposed offset measures where avoidance and mitigation measures will not adequately address effects on environmental values, including the identified MNES, and discussion of how any proposed offset package meets the requirements of the EPBC Act Environmental Offsets Policy as it relates to MNES;
- responses to issues raised through public and stakeholder consultation; and
- evaluation of the implications of the project and relevant alternatives for the implementation of applicable legislation and policy, including the principles and objectives of ecologically sustainable development and environmental protection.

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The proponent must also prepare a concise non-technical summary document (hard copy A4) no more than 25 pages for free distribution to interested parties. The EES summary document should include details of the EES exhibition, public submission process and availability of the EES documentation.

The EES may be supported by additional content on the proponent's website, including graphical, video and interactive content as may be appropriate. Any web-based content intended to support and be viewed in conjunction with the EES should be clearly labelled as such and be subject to the same standards of accuracy, clarity and objectivity that apply to the EES documentation.

3.3 Project description

The EES is to describe the project in sufficient detail both to allow an understanding of all components, processes and development stages, and to enable assessment of their likely potential environmental effects. The project description should canvass the following.

- An overview of each proponent, including relevant experience in developing and operating projects as well as its health, safety and environmental policies and track record
- Contextual information on the project, including its objectives and rationale, its relationship to relevant statutory policies, plans and strategies (if relevant), including the basis for selecting the proposed project corridor and implications of the project not proceeding.
- Land use activities (including beneficial and sensitive uses) in the project area and vicinity, supported by plans and maps where applicable.
- Details of all the project components, to the extent practicable, including:
  - location, footprint, layout and access arrangements, including laydown areas, equipment/machinery storage and stockpiling areas, during construction and operation;
  - proposed or foreseeable marine activities that may be necessitated by the project, such as seawater intakes and discharges and mixing zones;
  - design and expected construction staging and scheduling for the project;
  - proposed construction methods (to the extent relevant and practicable), temporary occupation of land, extent of areas to be disturbed during construction and infrastructure and service relocation;
  - solid waste, wastewater and hazardous material generation and management during construction and operation;
  - lighting, safety and security requirements during construction and operation; and
  - hours of construction work.
- Information on the project's operational life and any decommissioning and rehabilitation arrangements.
- Other necessary works directly associated with the project, such as road upgrades or connections, and infrastructure and services relocation.
- Approach to be taken to minimise visual and landscape impacts and contribute positively to neighbourhood character.

3.4 Project alternatives

The EES should document the proponent's consideration of relevant alternatives and include an explanation of how specific alternatives were shortlisted for evaluation within the EES. The EES should investigate and document the likely environmental, social and economic effects of the alternatives, particularly where these offer a potential to achieve beneficial environmental, social and economic outcomes and can meet the objectives of the project. The discussion of relevant alternatives should include:

- documentation of the basis and rationale for the proposed project;
- an explanation of the selection of the FSRU approach in preference to a land-based alternative;
- an explanation of the rationale for selecting the proposed site for the FSRU;
- an explanation of the rationale for selection of the proposed mode of regasification from the range of available options including variations in the FSRU design and potential to use a combination of both closed and open loop systems;
- an explanation of selection process for the proposed pipeline route;
- identification and evaluation of design alternatives for any components of the project;
- relevant environmental considerations; including a comparative description of the effects of each alternative on MNES; and
- discussion of short, medium and long-term advantages and disadvantages.

The effects of the preferred form of the project should be compared to those of other alternatives or to a "no project" base case. Where appropriate, the assessment of environmental effects of relevant design alternatives is to address the matters set out in the subsequent sections of this document. The depth of investigation of alternatives should be proportionate to their potential to minimise potential adverse effects as well as meet project objectives.

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3.5 Applicable legislation, policies and strategies

The EES will need to identify relevant legislation, policies, guidelines and standards, and assess their specific requirements or implications for the project, particularly in relation to required approvals, including (but not limited to) the following.

Commonwealth

- *Environment and Protection Biodiversity Conservation Act 1999* ~~(if a controlled action)~~;
- *Maritime Transport and Offshore Facilities Security Act 2003* (under which the Office of Transport Security requires a maritime security plan;
- *Navigation Act 2012* (and Australian Maritime Safety Authority marine orders);
- *Occupational Health and Safety (Maritime Industry) Act 1993*;
- *Marine Safety (Domestic Commercial Vessel) National Law Act 2012* and marine orders; and
- *National Law Act 2012* (only applies if FSRU is certificated as a domestic commercial vessel); and
- *Native Title Act 1993*.

Victorian

- *Environment Effects Act 1978*;
- *Environment Protection Act 1970* (EP Act) and *Environment Protection Amendment Act 2018* (EPA Act), Environment Protection (Industrial Waste Resource) Regulations 2009, as well as relevant State Environment Protection Policies (SEPPs) and related documents including SEPP (Waters), SEPP (Prevention and Management of Contamination of Land), SEPP (Ambient Air Quality), SEPP (Air Quality Management) and Environment Protection (Industrial Waste Resource) Regulations and SEPP (Control of Noise from Commerce, Industry and Trade) and *Noise from industry in regional Victoria*;
- *Pipelines Act 2005*;
- *Public Health and Wellbeing Act 2008* (PHW Act);
- *Planning and Environment Act 1987* (P&E Act), and relevant provisions in the Cardinia, Casey and Mornington Peninsula Planning Schemes;
- *Catchment and Land Protection Act 1994* (C&LP Act);
- *Conservation, Forests and Lands Act 1987* (CF&L Act)
- *Climate Change Act 2017*;

- *Occupational Health and Safety Act 2004* (OH&S Act) and relevant regulations;
- *Marine and Coastal Act 2018* (M&C Act);
- *Crown Land (Reserves) Act 1978*;
- *Land Act 1958*;
- *Local Government Act 1989*;
- *Flora and Fauna Guarantee Act 1988* (FFG Act) and relevant Action Statements for listed items;
- *Water Act 1989*;
- *Wildlife Act 1975*;
- *Road Management Act 2004*;
- *Transport Integration Act 2010* (TI Act);
- *Aboriginal Heritage Act 2006* (amended 2016) and Aboriginal Heritage Regulations 2018;
- *Traditional Owners Settlement Act 2010*;
- *Heritage Act 2017*;
- *National Parks Act 1975*;
- *Marine Safety Act 2010;*
- *Maritime Transport and Offshore Facilities Security Act 2003;* and
- *Port Management Act 1995; and*
- *Gas Safety Act 1997.*

The proponent will also need to identify and address other relevant policies, strategies, subordinate legislation and related management or planning processes that may be relevant to the assessment of the project. These include but are not limited to:

- EPBC Act policy statements, conservation advices, threat abatement plans and recovery plans for nationally listed threatened species and ecological communities and nationally listed migratory species.
- *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (2017);
- relevant roadside vegetation management strategies under the Cardinia, Casey and Mornington Planning Schemes;
- *Protecting Victoria's Environment – Biodiversity 2037*;
- *Healthy Waterways Strategy 2018*-2028
- Australia's obligations under the Ramsar Convention for the Western Port Ramsar site, including the implementation of the *Western Port Ramsar Site Management Plan (2017)*[4]; and
- Any other plans, guidelines or standards for the protection or management of relevant threatened species or communities or the management of listed potentially threatening processes.
- Relevant local government plans.

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3.6 Consultation

The proponent is responsible for informing and consulting with the public and stakeholders throughout the preparation and exhibition of the EES, in accordance with a suitable EES consultation plan (Section 2.2). The EES should document the process and results of the consultation undertaken by the proponent during the preparation of the EES, including:

- issues raised, and suggestions made by stakeholders or members of the public; and
- the proponent's responses to these issues, in the context of the EES studies and the associated consideration of mitigation measures.

The implementation stage of the project, if approved, will require ongoing community engagement. Therefore, the EES should also provide an outline of a program for community consultation, stakeholder engagement and communications to be delivered during implementation of the project. The program should include opportunities for local stakeholders to engage with the proponent to seek responses to issues that might arise during project implementation.

[4] The 2017 Management Plan replaced the *Western Port Ramsar Site Strategic Management Plan* (Parks Victoria, 2003).

3.7 Draft evaluation objectives

Through an integrated assessment of the project against the evaluation objectives, the project will need to consider a balance of economic, social and environmental outcomes over the short and long-term. This should include information on the project purpose and design considerations associated with the preferred configuration for the project.

Table 1 includes draft evaluation objectives that identify desired outcomes in the context of potential project effects and relevant legislation. During the development of the EES the proponent can consider refining the objectives and proposed evaluation framework, as well as develop specific assessment criteria to assist the evaluation of effects.

The framing of the draft objectives reflects the key subject matters to be investigated for the EES, relevant legislation and policies (Section 3.5), the objectives and principles of ecologically sustainable development and environmental protection, as well as environmental issues identified by the proponent in the referral documentation.

The level of effort applied to the investigation, management and mitigation of issues in the context of the draft evaluation objectives should be proportionate to the significance of potential adverse effects (Section 4). The proponent should consult closely with DELWP and the TRG throughout the preparation of the EES to ensure that the investigation of issues is undertaken soundly and appropriately targeted.

Table 1: Draft evaluation objectives

Draft evaluation objective	Key legislation
Energy efficiency, security, affordability and safety – To provide for safe and cost-effective augmentation of Victoria's natural gas supply in the medium to longer term, having regard to projected demand and supply of natural gas in context of the State's overall energy needs and management.	Environment Effects Act, OH&S Act, PH&W Act, Marine Safety Act, Pipelines Act, Commonwealth marine legislation
Biodiversity – To avoid, minimise or offset potential adverse effects on native vegetation, listed migratory and threatened species and communities and terrestrial, aquatic, intertidal and marine habitat values for listed threatened and other protected species, including through seawater intake and discharge impacts	EPBC Act, FFG Act, Wildlife Act, CF&L Act, EP Act, M&C Act, C&LP Act
Water, catchment values and hydrology – To minimise adverse effects on surface water (including waterway, wetland, estuarine, intertidal and marine) and groundwater environments and minimise effects on water quality and beneficial uses, including the ecological character of the Western Port Ramsar site	EPBC Act, EP Act & SEPPs, Water Act, C&LP Act, M&C Act
Cultural heritage – To avoid or minimise adverse effects on Aboriginal and historic cultural heritage.	AH Act, Heritage Act, P&E Act, Traditional Owners Settlement Act, Native Title Act.
Social, economic, amenity and land use – To minimise potential adverse social, economic, amenity and land use effects, including impacts on existing public facilities, social values, human health, businesses, land uses, open space and other landscape values.	P&E Act, PHW Act
Waste – To minimise generation of wastes by or resulting from the project during construction and operation, including accounting for direct and indirect greenhouse gas emissions	EP Act, C&LP Act, Climate Change Act

3.8 Environmental management framework

The EES will need to outline a transparent framework with clear accountabilities for managing and monitoring environmental effects and hazards associated with construction, operation, decommissioning and rehabilitation phases of the project to achieve acceptable environmental outcomes (Section 5). The EES should explain the way in which it is proposed to integrate the EMF with the key statutory approvals for the project, to give its commitments regulatory weight.

4. Assessment of specific environmental effects

Preparation of the EES and investigation of effects should be proportional to the project risk, as outlined in the Ministerial Guidelines (p. 14). A risk-based approach should be adopted during the EES studies, so that a greater level of effort is directed at investigating and managing those matters that pose relatively higher risk of adverse effects (refer to Section 1.2). This section sets out specific requirements for the assessment of effects, using the following structure for each draft evaluation objective.

Key issues or risks that the project poses to the achievement of the draft evaluation objective. In addition to addressing the highlighted issues, the proponent might undertake an appropriate environmental risk assessment.

Priorities for characterising the existing environment to underpin predictive impact assessments having regard to the level of risk. Any risk assessment by the proponent could guide the necessary data gathering.

Design and mitigation measures that could substantially reduce and/or mitigate the risk of significant effects.

Assessment of likely effects through predictive studies or estimates of effects that are reasonably likely, as well as evaluation of their significance, having regard to their likelihood.

Approach to manage performance measures that are proposed to manage risks of effects, assuming that identified design and mitigation measures are applied, to achieve appropriate outcomes. This should inform the assessment of likely residual effects (assuming proposed measures are implemented) and consideration of relevant environmental offsets where applicable.

Effects must include discussion of all potential direct, indirect, on-site and off-site effects as result of the proposal. The description and assessment of effects must not be confined to the immediate area of the proposed action but must also consider the potential of the proposed action to impact on adjacent areas that are likely to contain habitat for relevant species and communities, including conservation reserves, wetlands and parklands.

4.1 Energy efficiency, security, affordability and safety

Draft evaluation objective

To provide for safe and cost-effective augmentation of Victoria's natural gas supply in the medium to longer term, having regard to projected demand and supply of natural gas in context of the State's overall energy needs and management.

Key issues

- Workforce, nearby operations and public safety risks associated with the construction or operation of the project.
- The rationale for the project in the context of energy security, efficiency and affordability.
- The capacity of the project to exert a beneficial influence on Victoria's energy security and costs over the anticipated life of the project, relative to established legislative and policy imperatives.

Priorities for characterising the existing environment

- Characterise the human environment near the project relative to any relevant safety buffer standards for surrounding current land uses and reasonably foreseeable land uses.
- Characterise Victoria's existing and anticipated demand for natural gas relative to existing anticipated and emerging supply scenarios.

Design and mitigation measures

- Describe proposed measures to minimise risk and ensure safety for workforce, nearby operations and the public during construction and operation of the project.
- Describe proposed measures to ensure the security and affordability of gas supply.

Assessment of likely effects

- Assess the level of residual risk relative to relevant standards associated with the project, including the FSRU.

Approach to manage performance

- Describe the monitoring program to form part of the EMF to identify any potential hazards in time for corrective action to be taken.
- Outline an operational monitoring regime to enable the project's contribution to gas supply security and affordability, to be measured relative to forecasts.

4.2 Biodiversity

Draft evaluation objective

To avoid, minimise or offset potential adverse effects on native vegetation, listed migratory and threatened species and communities and terrestrial, aquatic, intertidal and marine habitat values for listed threatened and other protected species, including through seawater intake and discharge impacts.

Key issues

- Direct loss of native vegetation and any associated listed threatened flora and fauna species and communities known or likely to occur in or adjacent to the project works.
- Potential adverse impacts on the ecological character of the Western Port Ramsar site, with respect to its ongoing habitat for water birds and especially migratory wading birds.
- Direct loss of, or degradation to, habitat for flora and fauna species listed as threatened or migratory under the EPBC Act, FFG Act and/or DELWP advisory lists, including but not limited to the following species:
  - Southern Right Whale (*Eubalaena australis*)
  - Humpback Whale (*Megaptera novaeangliae*)
  - Southern Brown bandicoot (*Isoodon obseulus obesulus*)
  - Loggerhead Turtle (*Caretta caretta*)
  - Green Turtle (*Chelonia mydas*)
  - Leatherback Turtle (*Dermochelys coriacea*)
  - Australian Grayling (*Prototroctes maraena*)
  - Dwarf Galaxias (*Galaxiella pusilla*)
  - Growling Grass Frog (*Litoria raniformis*)
  - Australian Fairy Tern (*Sternula nereis nereis*);
  - (Far) Eastern Curlew (*Numenius madagascariensis*);
  - Curlew Sandpiper (*Calidris ferruginea*);
  - Sharp-tailed Sandpiper (*Calidris acuminata*);
  - Red Knot (*Calidris canutus*)
  - Great Knot (*Calidris tenuirostris*)
  - Greater Sand Plover (*Charadrius leschenaultia*)
  - Lesser Sand Plover (*Charadrius mongolus*)
  - Bar-tailed Godwit (Baueri) (*Limosa lapponica baueri*);
  - Northern Siberian Black-tailed Godwit (*Limosa limosa menzbieri*);
  - Sharp-tailed Sandpiper (*Calidris acuminata*)
  - Red-necked Stint (*Calidris ruficollis*);
  - Double-banded Plover (*Charadrius bicinctus*); and
  - Bar-tailed Godwit (*Limosa lapponica*)
  - Dense Leek-orchid (*Prasophyllum spicatum*)
- .
- Indirect loss of vegetation or habitat quality, that may support any listed species or other protected fauna, resulting from hydrological or hydrogeological change, edge effects, habitat fragmentation, loss of

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connectivity, or other disturbance impacts arising from construction or operation, including noise, vibration and lights.

- Potential for adverse effects on the ecological character and biodiversity values of the Western Port Ramsar site including, but not limited to, the ~~bird~~ species mentioned above.
- Potential for indirect effects on biodiversity values including but not limited to those effects associated with changes in hydrology (including surface and groundwater changes), water quality (i.e. on water dependent ecosystems), contaminants and pollutants, environmental weeds, pathogens and pest animals including, but not limited to declared weeds, pathogens and pest animals under the C&LP Act.
- Potential for significant short and long term impacts on marine biota due to entrainment of organisms in seawater for regasification or due to discharge of cooled seawater after use for regasification, including impacts resulting from reduced availability of food for other species, resultant hydrodynamic changes and other impacts such as long term changes to populations and distribution.
- Potential for impacts resulting from increased shipping activity on cetaceans and other large marine animals, including acoustic impacts and potential collisions.
- Potential for significant impacts on the marine environment resulting from accidental or unintended leaks or spills arising from construction works or operational activities, including unintended introduction of exotic species, e.g. through ballast water.
- The availability of suitable offsets in accordance with relevant guidelines for the loss of native vegetation and habitat for relevant threatened species, ecological communities and migratory species which are listed under the EPBC Act and/ or the FFG Act.

Priorities for characterising the existing environment

- Characterise the distribution and quality of native vegetation and terrestrial, aquatic, intertidal and marine habitat and any wildlife movement in the area that could be impacted by the project or associated works. This must include the quality and type of habitat impacted and quantification of the total impact area and areas indirectly impacted from the proposed action and must be informed as appropriate by targeted surveys undertaken in accordance with the appropriate DELWP survey guidelines, as well as relevant studies and literature.
- Identify the existing or likely presence of any protected species, and especially species listed under the FFG Act and DELWP advisory lists, as well as environmental weeds, pathogens and pest animals.
- Characterise the listed threatened and migratory species, other protected species, ecological communities and potentially threatening processes that are likely to be present, in the Western Port Ramsar site or in other wetlands nearby. This characterisation is to be informed by the literature and suitable available data (especially, where relevant, data <5 years old) and supported by seasonal or targeted surveys where necessary. Details of the scope, timing and method for studies or surveys used to provide information on the ecological values at the site (and in other areas that may be impacted by the project) should be outlined.
- As appropriate, identify the different uses which significant species may make of different habitat areas that could be affected by the project at different times or life-cycle stages.
- Identify and characterise any groundwater dependant ecosystems that may be affected by the project works. This characterisation is to be informed by relevant data, literature and appropriate surveys.
- Identify the marine fauna and flora that could be affected directly or indirectly by the FSRU, including but not limited to entrainment through pumping system, susceptibility to changed water temperature or susceptibility to discharges containing chlorine or other pollutants.
- Identify exotic marine organisms that are already present or established near the project.
- Identify flora and fauna that could be affected by the project's potential effects on air quality, noise or vibration, or could be disoriented or otherwise impacted by project lighting.
- Describe the biodiversity values that could be affected by the project, including:
  - native vegetation and any ecological communities listed under the FFG Act;
  - presence of, or suitable habitats for, native flora and fauna species, especially those listed under the FFG Act, and DELWP advisory lists; and
  - use of the site and its environs for movement by FFG Act, and DELWP advisory list listed fauna species and other protected species.
- Describe the existing threats present to biodiversity values, including:
  - direct removal of individuals or destruction of habitat;

- disturbance or alteration of habitat conditions (e.g. habitat fragmentation, changes to water quantity or quality, fire hazards, etc.);
- threats of mortality of listed threatened fauna;
- presence of or risk of introduction of any declared weeds, pathogens and pest animals within and near the project area; and
- initiating or exacerbating potentially threatening processes under the FFG Act.

Design and mitigation measures

- Identify potential and proposed design options and measures that could avoid, minimise, mitigate or manage significant direct and indirect effects on native vegetation and any listed ecological communities or flora and fauna species and their habitat including the ecological character of the Western Port Ramsar site and habitat values within or adjacent to the pipeline alignment.
- Relevant best practice guidelines and standards must be considered when designing mitigations, including those referred to in Section 3.5.

Assessment of likely effects

- Assess likely direct and indirect effects of the project and relevant alternatives on native vegetation, ecological communities and protected fauna and flora species, in particular any species listed under the FFG Act or DELWP advisory lists.
- Assess likely direct and indirect effects of the project on the ecological character and habitat values of the Western Port Ramsar wetland site, including but not limited to effects of wastewater discharges, other waste streams, noise, vibration and light.
- Assess likely direct and indirect effects of the project and relevant alternatives on protected fauna and their habitat, including threatened species listed under the FFG Act or DELWP advisory lists, relative to existing hazards and risks where relevant and with regard to relevant Action Statements.
- Assess likely cumulative effects on biodiversity-related values that might result from the project in combination with other projects or actions taking place or proposed nearby.

Approach to manage performance

- Describe and evaluate proposed measures to manage residual effects of the project on biodiversity values, including an outline of an offset strategy that sets out and includes evidence of the offsets that can be secured or are proposed to satisfy offset policy requirements.
- Describe and evaluate the approach to monitoring and the proposed contingency measures to be implemented in the event of adverse residual effects on flora, fauna and ecological community values requiring further management.
- Identify any further methods proposed to manage risks and effects on other biodiversity values and native vegetation, to form part of the EMF (see Section 5).

4.3 Water, catchment values and hydrology

Draft evaluation objective

To minimise adverse effects on surface water (including waterway, wetland, estuarine, intertidal and marine) and groundwater environments and minimise effects on water quality and beneficial uses, including the ecological character of the Western Port Ramsar site.

Key issues

- The potential for adverse effects on the functions, values and beneficial uses of surface water environments, especially the Western Port Ramsar site, such as interception or diversion of flows or changed water quality or flow regimes during construction and operation.
- The potential for adverse effects on the functions, values and beneficial uses of groundwater due to the project, on groundwater dependent ecosystems (GDEs) and the ecological character of the Western Port Ramsar site due to changes in groundwater levels, behaviour or quality.
- The potential for adverse effects on nearby and downstream water environments due to changed flow regimes, floodplain storage, run-off rates, water quality changes, or other waterway conditions during construction and operation, in the context of relevant climate change projections.
- The potential for adverse effects on biodiversity values of the Western Port Ramsar site.

Priorities for characterising the existing environment

- Describe marine, estuarine, intertidal and freshwater waters that could be affected, with respect to water quality, water behaviour and beneficial uses.
- Characterise the existing local surface water quality and behaviour, including the protected beneficial uses and values.
- Characterise the local groundwater quality and behaviour, including the protected beneficial uses and values and identifying any GDEs that might be affected by the project.
- Characterise the interaction between surface water and groundwater within the project and broader area.
- Detail and evaluate the hydrological/hydro-geological modelling techniques utilised.

Design and mitigation measures

- Identify and evaluate aspects of project works, and proposed design refinement options or measures, that could avoid or minimise significant effects on water environments.
- Describe further potential and proposed design options and measures that could avoid or minimise significant effects on beneficial uses of surface water, groundwater and downstream water environments during the project's construction and operation.

Assessment of likely effects

- Identify and evaluate effects of the project and relevant alternatives on groundwater and surface water near the project works, including the likely extent, magnitude and duration (short and long term) of changes to water quality, water level or flow paths during construction and operation, considering appropriate climate change scenarios.

Approach to manage performance

- Describe any further methods that are proposed to manage risks of effects on groundwater and surface water and catchment values, as well as water quality, to form part of the EMF (see Section 5).
- Describe any further methods that are proposed to manage risks of effects as a result of nearby projects impacting on water inflow to water environments and catchment values, as well as water quality.
- Describe and evaluate the approach to monitoring and the proposed contingency measures to be implemented in the event of adverse residual effects on water quality and catchment values requiring further management.
- Describe and evaluate the approach to monitoring and the proposed ongoing management measures to be implemented to avoid adverse residual effects on the Western Port Ramsar site.

4.4 Cultural heritage

Draft evaluation objective

To avoid or minimise adverse effects on Aboriginal and historic cultural heritage.

Key issues

- Potential for adverse effects on Aboriginal and historic (including underwater cultural heritage and archaeology) cultural heritage values.
- Potential for permanent loss of significant heritage values.

Priorities for characterising the existing environment

- Review land use history, previous studies and relevant registers to identify areas prospective for Aboriginal and historical cultural heritage values.
- Identify Aboriginal cultural heritage sites and values that could be affected by the project.
- Identify areas of Aboriginal cultural heritage sensitivity relevant to the project.
- Investigate the condition and sensitivity of identified sites and precincts.
- Document known and previously unidentified places and sites of historic cultural heritage significance within and adjoining the project area, in accordance with relevant Heritage Victoria guidelines.

Design and mitigation measures

- Describe and evaluate potential and proposed design and construction mitigation methods to address effects on Aboriginal and historic cultural heritage.

Assessment of likely effects

- Assess potential effects on Aboriginal and historic cultural heritage resulting from the project and relevant alternatives.
- Assess the potential effects on sites and places of historic and cultural heritage significance, having regard to relevant Heritage Victoria guidelines.

Approach to manage performance

- Identify further methods proposed to manage risks of effects on Aboriginal and historic cultural heritage values as part of the EMF (see Section 5)
- Prepare a cultural heritage management plan (CHMP).
- Outline and evaluate proposed additional measures to manage risks of effects on sites and places of Aboriginal cultural heritage significance, within the framework of a draft CHMP, and on sites and places of historic cultural heritage significance, as part of the EMF.

4.5 Social, economic, amenity and land use

Draft evaluation objective

To minimise potential adverse social, economic, amenity and land use effects, including impacts on existing public facilities, social values, human health, businesses, land uses, open space and other landscape values.

Key issues

- Potential for project works to affect business (including farming) operations or other existing or approved facilities or land uses.
- Potential for dust emissions resulting from construction works and activities, including dust from potentially contaminated soil.
- Potential for increases in noise and vibration levels during project construction or operation to affect amenity adversely in adjacent residential and parkland areas.
- Potential for increases in noise levels from project construction or operation to affect amenity significantly in adjacent residential and parkland areas.
- Potential for project construction or operation to affect local air quality adversely.
- Potential for temporary or permanent changes to use of or access to existing infrastructure in the project area and in its vicinity.
- Potential for impacts on reasonably foreseeable upgrades to public infrastructure.
- Potential for impacts on recreational boating activities from the project.
- Potential for adverse impacts on visual or landscape values.

Priorities for characterising the existing environment

- Describe the demographic and social character of residential communities near the project.
- Identify dwellings and any other potentially sensitive receptors (e.g. community centres, open spaces, etc.) that could be affected by the project's potential effects on air quality, noise or vibration levels, especially vulnerable receptors including children and the elderly.
- Monitor and characterise background levels of air quality (e.g. dust and greenhouse gas emissions from equipment), noise and vibration near the project, including established residential areas and other sensitive receptors.
- Identify existing and reasonably foreseeable land uses and businesses occupying land to be traversed by, or adjacent to, the project.
- Identify relevant strategic plans specifying or encouraging land use outcomes for land to be occupied by the project.
- Identify existing levels of recreational boating in the vicinity of the Crib Point jetty and the channels used by commercial shipping to move to and from the jetty.
- Identify visual and landscape values near the project, including vantage points from which elements of the project may be visible.

Design and mitigation measures

- Identify potential and proposed design responses and/or other mitigation measures to avoid, reduce and/or manage any significant effects for sensitive receptors during project construction and operation arising from specified air pollution indicators, noise, vibration and lighting, in the context of applicable policy and standards and the anticipated increase in shipping traffic in Western port resulting from the project.
- Identify options for mitigating impacts from project construction or operation on adjacent businesses and community facilities including open space.
- Identify options for mitigating or managing visual or landscape impacts of the project.

Assessment of likely effects

- Identify implications for current land uses and immediately foreseeable changes in land use.
- Predict likely atmospheric concentrations of dust and other relevant air pollution indicators at sensitive receptors near the FSRU or along the pipeline corridor, during project construction and operation, using an air quality impact assessment undertaken in accordance with relevant SEPP environmental objectives.
- Assess likely noise, vibration and lighting impacts at sensitive receptors adjacent to the project during project construction and operation (both with and in the absence of the proposed mitigation measures), relative to relevant standards.
- Describe the likely extent and duration of temporary disruption to existing land uses arising from project construction.
- Describe potential impacts on public infrastructure including roads resulting from construction or operations activities.
- Assess potential safety hazards to the public arising from project construction and operation.

Approach to manage performance

- Measures to manage other potentially significant effects on amenity, environmental quality and social wellbeing (including access to open spaces) should also be addressed in the EES, including a framework for identifying and responding to emerging issues, as part of the EMF (Section 5).
- Describe any further measures that are proposed to enhance social outcomes, and either manage risks to landscape and recreational values, or enhance visual amenity outcomes both for residents living near the project and for visitors to the locality, to form part of the EMF (see section 5).

4.6 Waste management

Draft 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.

Key issues

- Potential for adverse environmental or health effects from waste materials/streams generated from project works.
- Potential for emissions of greenhouse gases to result from the project, including embedded emissions due to construction materials and processes as well as direct and indirect emissions from construction and operation.
- Potential for discharge of cooled water or other pollutants including chlorine resulting from regasification.
- Potential for unplanned spills of product or other pollutants including bilge or ballast water that could contain exotic organisms.

Priorities for characterising the existing environment

- Describe available options for treatment or disposal of solid and liquid wastes generated by the project.
- Identify the sensitivity of receiving waters to cooled seawater discharge or other polluting or toxic constituents of discharged water, including determining the geographical extent over which changed temperatures and contaminants may cause adverse environmental effects.

- Identify the potential occurrence of contaminated or potential acid sulphate soils within the area where project works may occur.

Design and mitigation measures

- Describe how the waste hierarchy will be applied to control and manage waste.
- Identify suitable off-site disposal options for waste materials.
- Describe measures proposed to be implemented to treat discharge seawater and to minimise the extent of the mixing zone.
- Identify options for reducing direct and indirect greenhouse gas emissions resulting from the construction and operation of the project.
- Describe measures to minimise the risk of spills including of water from vessels which might contain contaminants or exotic organisms.

Assessment of likely effects

- Identify potential environmental effects resulting from the generation, storage, treatment, transport and disposal of solid waste, including contaminated or potential acid sulphate soil from project construction and operation.
- Quantify anticipated greenhouse gas emissions from the project relative to time.
- Identify potential impacts resulting from contaminants or water temperature change due to discharge of seawater used for regasification, regarding the ecological character of the Western Port Ramsar site, for example due to effects on plankton and larvae productivity and resultant changes in bird food resources.

Approach to manage performance

- Describe proposed management approach for solid waste.
- Describe proposed measures to reduce, monitor and audit greenhouse gas emissions from the project.
- Describe proposed measures to reduce, monitor and audit discharges to water from the project.
- Describe measures for emergency and spill response.
- Describe contingency measures for responding to unexpected impacts resulting from waste management or discharges.

5. Environmental management framework

Inadequate management of environmental effects during project construction, operation and site reinstatement could result in a failure to meet statutory requirements or sustain stakeholder confidence.

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. The EES should also explain how it is proposed to deliver the EMF commitments through key statutory approvals for the project, to give its commitments regulatory weight.

The EMF should describe the baseline environmental conditions to be used to monitor and evaluate the residual environmental effects of the project, as well as the efficacy of applied environmental management and contingency measures. The framework should include the following.

- The context of required approvals and consents, including any anticipated requirements for related environmental management plans, whether for project phases or elements.
- The proposed environmental management system to be adopted.
- organisational responsibilities and accountabilities for environmental management.
- 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).
- The environmental management measures proposed to address specific issues, including commitments to mitigate adverse effects and enhance environmental outcomes.
- The proposed objectives, indicators and monitoring requirements, including for managing or addressing:
  - social outcomes and community engagement;
  - safety outcomes
  - biodiversity values, including offsets;
  - maintenance of the ecological character of the Western Port Ramsar site;
  - groundwater and surface water quality, surface water flow and groundwater regimes;
  - solid and liquid waste, including recycling and handling of potentially hazardous or contaminated waste, PASS and other excavated spoil;
  - noise, vibration, and emissions to air, including dust and greenhouse gases;
  - Aboriginal and historic cultural heritage values;
  - traffic during construction, including managing temporary disruption and changed accessibility;
  - disruption of and hazards to existing infrastructure;
  - site reinstatement, including handling of topsoil; and
  - emergency management.
- 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.
- 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.
- Procedures for auditing and reporting of performance including compliance with statutory conditions and standards.

The EMF should outline the relevant management plans for construction, operation and rehabilitation phases of the project to achieve the objectives listed above. Equally, the EMF should detail a program for community consultation, stakeholder engagement and communications during the construction, operation and rehabilitation of the project, including opportunities for local stakeholders to engage with the proponent to seek responses to issues that might arise when the project is undertaken.

APPENDIX A EE Act Decision

DECISION ON PROJECT: Gas Import Jetty Facility and Crib Point to Packenham Gas Pipeline

Decision under section 8B(3)(a) of the *Environment Effects Act 1978*

Assessment though an environment effects statement (EES) under the *Environment Effects Act 1978* **is required** for the reasons set out in the attached Notice of Reasons for Decision.

Procedures and requirements under section 8B(5) of the *Environment Effects Act 1978*

The procedures and requirements applying to the EES process, in accordance with both section 8B(5) and the *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978* (Ministerial Guidelines), are as follows.

(i) The EES is to document the investigation, avoidance and minimisation of potential environmental effects of the proposal and relevant alternatives, as well as associated environmental mitigation and management measures. The EES should address:

a. effects on biodiversity and ecological values within and near the proposed pipeline and gas import facility at Crib Point, including potential impacts associated with the loss of native vegetation, indirect and direct impacts on the habitat for listed threatened species of flora and fauna, and risks to other ecological values and ecosystem services of conservation areas, nature parks, marine reserves and Ramsar sites in proximity to the proposal;

b. effects from seawater intake to and cold water/residual chlorine discharges from the gas import jetty facility, including potential medium and long-term effects on the ecology of the North Arm of Western Port associated with changes to seawater quality and entrainment of larvae of marine species (threatened and non-threatened);

c. effects from construction on surface water environments, including local waterways and the broader catchment, as well as groundwater (hydrology, quality, uses and dependent ecosystems), including risks associated with potential acid sulphate soils;

d. effects on the landscape values and land-uses of the sites and surrounding areas, including the implications for any directly affected agriculture and the proposed rehabilitation of the pipeline corridor;

e. effects on soil and land-uses from contamination during the construction and operation of the proposal;

f. effects on Aboriginal and historic cultural heritage values;

g. effects of project construction and operation on air quality and noise on nearby sensitive receptors (in particular residences);

h. effects on socio-economic values, at local and regional scales, potentially generated by the project, including increased traffic movement and indirect effects of the project construction workforce on the capacity of local community infrastructure; and

i. effects of waste (solid, liquid and gas) that might be generated by the project during construction and operation.

(ii) The matters to be investigated and documented in the EES will be set out in detail in scoping requirements prepared by the Department of Environment, Land, Water and Planning (the department). Draft scoping requirements will be exhibited for 15 business days for public comment, before being finalised and then issued by the Minister for Planning.

(iii) The level of detail of investigation for the EES studies should be consistent with the scoping requirements issued for this project and be adequate to inform an assessment of the potential environmental effects

(and their acceptability) of the project and any relevant alternatives, in the context of the Ministerial Guidelines.

(iv) The proponent is to prepare and submit to the department a draft EES study program to inform the preparation of scoping requirements.

(v) The department is to convene an inter-agency technical reference group (TRG) to advise the proponent and the department, as appropriate, on scoping and adequacy of the EES studies during the preparation of the EES, as well as coordination with statutory approval processes.

(vi) The proponent is to prepare and submit to the department its proposed EES consultation plan for engaging with the public and stakeholders during the preparation of the EES. Once completed to the satisfaction of the department, the consultation plan is to be implemented by the proponent, having regard to advice from the department and the TRG.

(vii) The proponent is also to prepare and submit to the department its proposed schedule for the studies, preparation and exhibition of the EES, following confirmation of draft scoping requirements. This is to enable effective management of the EES process on the basis of an agreed alignment of the proponent's and department's schedules, including TRG review of technical investigations and the EES documentation.

(viii) The proponent is to apply appropriate peer review and quality management procedures to enable the completion of EES studies and documentation to an acceptable standard.

(ix) The EES is to be exhibited for a period of 30 business days for public comment, unless the exhibition period spans the Christmas–New Year period, in which case 40 business days will apply.

(x) An inquiry will be appointed under the *Environment Effects Act 1978* to consider and report on the environmental effects of the proposal.

Notification

The following parties (proponent and relevant decision-makers) are to be notified of this decision in accordance with sections 8A and 8B(4) of the *Environment Effects Act 1978*.

- AGL Wholesale Gas Limited and APA Transmission Pty Limited (proponent)
- Minister for Energy, Environment and Climate Change
- Secretary of the Department of Environment, Land Water and Planning
- CEO of the Environment Protection Authority
- Mayor of Mornington Peninsula Shire Council
- Mayor of City of Casey
- Mayor of Cardinia Shire
- Executive Director Aboriginal Victoria
- Executive Director Heritage Victoria

HON RICHARD WYNNE MP
Minister for Planning

APPENDIX B Gas Import Facility EPBC decision

<<Controlled action decision for Crib Point facility to be inserted once document is final for pdf>>

APPENDIX C Gas Pipeline EPBC decision

<<Controlled action decision for gas pipeline to be inserted once document is final for pdf>>

FOI 190719
Document 5

s22

From: s22 delwp.vic.gov.au
Sent: Friday, 12 October 2018 11:37 AM
To: s22
Subject: RE: Referral - (EPBC - 2018/8297) Crib Point to Pakenham Gas Pipeline, Vic AND EPBC Referral (2018/8298) Gas Import Facility

Hi s22

I think the comments from the biodiversity region may be delayed by a day or two due to requirement for deputy secretary sign off requirements, I also spoke to s22 regarding potential for using the bilateral. He said that there shouldn't be a problem and that it is likely that we'd ask for it.

Have a great weekend (when it gets here)!

Cheers!
s22 **| Impact Assessor | Impact Assessment Unit**
Planning | Department of Environment, Land, Water and Planning

Level 8, 8 Nicholson Street, East Melbourne, Victoria 3002
T: (03) 9637 s22 | **E**: s22 delwp.vic.gov.au

MC18-008932

s22

From: s22
Sent: Tuesday, 12 June 2018 11:36 AM
To: MinisterialCorrespondence
Subject: proposed AGL floating gas plant at Crib Point-ESD
Attachments: 180605s47F pdf

Categories: Min Reply

For min reply.
Cheers N

(VIP-)

s22
t: (02) 6277 s22 m: s22 @environment.gov.au

From: Henderson, Sarah (MP) [mailto:Sarah.Henderson.MP@aph.gov.au]
Sent: Tuesday, 12 June 2018 12:31 AM
To: Josh Frydenberg (Shared) <Josh.Frydenberg@environment.gov.au>
Cc: s47F ; s47F (S. Henderson, MP) s47F @aph.gov.au>
Subject: Ministerial representation on behalf of s47F (Coranagamite) (HL)

Dear Minister

(2)

I write to make representations on behalf of s47F who is a constituent in the Corangamite electorate.

Please find attached correspondence I have received from s47F expressing her concerns about Crib Point.

Thank you for your consideration of this matter and I look forward to your response.

Kind regards, Sarah

Sarah Henderson MP
Federal Member for Corangamite
3A/195 Colac Rd Waurn Ponds Vic 3216 03 5243 1444
sarah.henderson.mp@aph.gov.au www.sarahhenderson.com.au
Authorised by Sarah Henderson MP, Waurn Ponds 3216

(1)

Sarah Henderson
3A/195 Colac Road
Waurn Ponds VIC 3216

s47F

31st of May 2018

Dear Ms Henderson,

Having represented the Corangamite region, not only as a winner of the s47F, but also as an s47F, I have received various correspondences from you offering assistance should it be required.

I write to you because I have recently become aware of the proposed AGL floating gas plant at Crib Point. While the issue does not directly affect the Corangamite region, it is important to me because most of my extended family live on the Mornington Peninsula and I have grown up regularly visiting the beautiful Westernport Bay. The proposed AGL gas plant could not only be detrimental to the RAMSAR protected wetland of Westernport Bay, but compromise the region's lucrative tourist industry. While gas and employment are running short, the AGL gas conversion plant is not a worthwhile, long-term solution.

As the serving member for our electorate, I would greatly appreciate it if you could represent the values of environment and sustainable community development held by so many in not only the Corangamite region but throughout our state, and stop the floating gas plant from going ahead in whatever manner is available to you.

I would greatly appreciate it if you would take the time to read the attached document containing my research on this issue, which I will also be sending to other members of state and local government.

I look forward to hearing from you in the future,

Sincerely,

s47F

s47F

31st of May 2018

To whom it may concern,

I write to you because I have recently become aware of the proposed AGL floating gas plant at Crib Point. The issue is particularly important to me because most of my extended family live on the Mornington Peninsula and I have grown up regularly visiting the beautiful Westernport Bay.

The local economy of the bay depends largely on its recreation and tourism industry which directly and indirectly supports small and large businesses in the area. It is home to a variety of commercial and recreational fishing areas, including thriving saltwater mussel farms, and its beaches provide safe, enjoyable swimming, boarding and boating environments for children and adults alike. Not only does the tourist industry contribute to the local economy, the Phillip Island Penguin Parade and Nature Park is our state's second most lucrative tourist attraction, contributing almost $500 million to Victoria's economy annually.

Of course I understand that the government is backing this project in order to bring jobs to the Crib Point growth area. However, the 40 promised jobs proposed by AGL seem negligible compared to the loss of employment this project could cause through damage to the pristine marine and terrestrial environments that the tourism and recreation industries rely on so heavily.

Of this foreseeable damage, the worst-case scenario could be an oil spill. In industry terms, a small oil spill is one of less than 10 tonnes. In recent history, an oil spill of less than one tonne near Cape Otway left *hundreds* of penguins and other shorebirds covered in oil and drowning. The rescue effort for this disaster was immense and many penguins had to be euthanized. Now imagine if a small-scale oil spill like this were to occur within the enclosed Westernport Bay[1]. What would become of the penguins that the region's tourism industry depends so heavily on? The devastating truth of the matter is that an oil spill could quite easily occur in the bay if a boat were to run aground. As stated in an article on the Westernport Peninsula Protection Council website, "the waters of Westernport are very shallow and some areas like McHaffie's Reef are rocky. The channel is very narrow. The tides are very strong. AGL ships are 260m long making running aground a real possibility."

In addition, the cooled liquefied gas transported by AGL ships is so cold that no human could go near a spill until the entire load had spilled and warmed, by which point it could cause fires or enter the bay's waters should it be raining.

Even ignoring the worst case scenarios, the shipping and conversion of gas could have a catastrophic impact on the local biosphere. The huge AGL ships would require the bay to be dredged, drastically increasing the turbidity of the water. This would inhibit the growth of the seagrass beds, which provide a vital base to the marine food chain. The gas conversion process uses sea water to warm the gas, leaving the water 7 degrees colder. This could potentially damage the temperature-sensitive mangroves along the coast of the bay.

[1] See https://www.wppcinc.org/oil-and-westernport.html for the VNPA's research on oil spill scenarios in Westernport Bay.

Westernport's variety of ecosystems includes mudflats, seagrass beds and mangroves which are home to about 1350 species of marine invertebrate fauna, approximately four times that found in nearby Port Phillip Bay. This is in addition to an abundance of fish, dolphins and shorebirds. For this reason, the bay has been listed as a RAMSAR wetland. The RAMSAR Convention, established in 1971 by UNESCO, is an intergovernmental treaty which endorses "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world". The potential damage caused by the proposed AGL conversion plant clearly does not comply with the RAMSAR agreement.

AGL has planned this gas conversion plant for one compelling reason – we need gas. Of course I understand this. The prices of gas have soared of late because of increased demand while much of Victoria's gas is being exported overseas. What does not make sense to me is why we are implementing high-cost, long-term infrastructure to convert liquefied gas shipped in from other states and internationally when *our* gas is being piped to Queensland to become liquefied and exported. If our contracts with Asian countries are too much to get around, maybe a more sensible option would be to invest in other, more long-term forms of energy instead of relying on our finite supply of natural gas.

The more I have researched natural gas, the more it has become clear to me that it is not a viable long-term solution. In fact, a video on AGL's website states clearly that a "gas shortfall" is predicted. Australia's natural gas supplies are set to last us past the end of the century at our current rate of consumption. However, our current rate of gas consumption is set to increase due to the closure of coal-fired power stations such as Hazelwood and the rising prices of LPG as crude oil becomes harder and more expensive to extract. Instead of making natural gas more accessible and running the supply dry more quickly, why not invest in biogas or other sustainable fuels?

The other thing that worries me about natural gas, as any fossil fuel, is the environmental effects of its extraction. Just last week in Queensland, Linc Energy was fined 4.5 million dollars for its wilful and unlawful environmental harm during gas extraction between 2007 and 2013. The company, being currently in liquidation, is now refusing to pay the fine. Taxpayers may now be forced to cover the damages, which amount to millions of dollars of remediation over decades. There was, until the beginning of this year, a 314 square kilometre exclusion zone around the area in which landholders could not dig because of the explosive material present in the soil. The region's groundwater could take 10 to 20 years to recover.

The world's energy systems are already beginning to change. The transport industry is in the process of converting from petrol and gas to electricity. As previously mentioned, coal-fired power stations are being phased out. Investing in solar or hydro energy instead of natural gas may let the price of gas rise, but an increased gas price would put pressure on businesses and households to make the switch away from gas, towards more sustainable sources of energy, paving the way for the progressive, modern electricity system that my generation will rely on.

In summary, the proposed AGL gas plant could not only be detrimental to the RAMSAR protected wetland of Westernport Bay, but compromise the region's lucrative tourist industry. While gas and employment are running short, the AGL gas conversion plant is not a worthwhile, long-term solution to these problems.

s47F

GREG **HUNT** MP
MEMBER FOR FLINDERS
MINISTER FOR HEALTH

MC18-013426

VIP

30 July 2018

The Hon Josh Frydenberg MP
Minister for the Environment and Energy
PO Box 6022
Parliament House
CANBERRA VIC 2600

Dear Minister,

I have been contacted by my constituents, s47F s47F and s47F s47F, regarding the proposed AGL LNG Floating Gas Terminal project at Crib Point.

I have enclosed a copy their letter, which provides further details about the issue and their request.

Your advice in this matter would be greatly appreciated.

Yours sincerely,

GREG HUNT MP

encl

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greg.hunt.mp@aph.gov.au greghunt.com.au greg.hunt.mp GregHuntMP Printed on Recycled Paper

26th July 2018

s47F

Dear Minister Hunt,

RE: Proposed AGL LNG floating gas terminal project at Crib point, Westernport.

AGL proposes to install a floating storage and regasification unit (FSRU) at Crib Point jetty and has contracted APA to build the 60km connecting pipeline to Pakenham.

We, the undersigned, are writing to request that as our local federal representative, you make an urgent presentation on our behalf to Minister Josh Frydenberg regarding the above project.

As you aware, AGL (with the support of the Andrews Labour government) is currently attempting to have the two facets of its project – FSRU and pipeline - assessed separately. From a planning perspective, treating each aspect of this proposal independently lessens the likelihood of requiring a full EES, despite the fact that either clearly cannot proceed or function without the other.

This is in direct contravention of the State of Victoria's Ministerial guidelines for an EES which states "that all projects should be referred to in their entirety'.

AGL and APA are yet to refer the documents and reports to the Hon. Richard Wynne MP for planning approval.

It's believed they will do this by the end of this month.

In addition, there is a complete lack of transparency regarding the tenders and undisclosed amount of public money the Port of Hastings is spending on the remediation of the Crib Point pier and surrounds to prepare for the installation of the AGL Floating Regasification Unit. As of yesterday, POHDA confirmed AGL are paying for and have already commenced the ground work and fences on Crown land at the site before the planning process has even formally commenced.

We would like to request (with your support) a personal briefing with Minister Frydenberg by the Save Westernport Group (and affiliates) or, his commitment to a full Federal review (leading to an EPBC), of the terms of reference and veracity of the reports tendered by AGL and APA as part of the planning process and an assessment of the impact of the projects on Westernport and surrounds including, but not limited to: environmental, marine, endangered species, hydrology and pollution impacts.

Save Westernport, as nominated representatives of the local community, feel strongly that world's best practise must be enacted with regards these projects, because the proposed locations include the most fertile sections of Melbourne's food bowl and Westernport's unique, clean marine environment which is home to a large percentage Victoria's endangered species,

is recognised internationally for the global importance of its wetlands, seagrass beds and mangrove fish nurseries and currently supports tens of billions of dollars in tourism income and over 115,000 jobs for the Victorian economy.

These factors should be fully weighted up and reviewed to ensure the Victorian communities (both human and other species) living in and around Westernport's inter-tidal and sensitive bay are not adversely impacted for short term gain of a large private company with a poor corporate record.

Yours sincerely

Representatives of The Save Westernport group and affiliated community groups

s47F