FOI 190719
Document 1

DEPARTMENT OF THE ENVIRONMENT AND ENERGY

To: James Barker, Assistant Secretary, Assessments and Governance, (for decision)

Referral Decision Brief – Gas import facility, Crib Point, Victoria (EPBC 2018/8298)

Timing: 8 November 2018 - Statutory timeframe.

Recommended Decision	**NCA** ☐ **NCA(pm)** ☐ **CA** ☒
Designated Proponent	AGL Wholesale Gas Limited ABN: 26 072 948 504
Controlling Provisions triggered or matters protected by particular manner	World Heritage (s12 & s15A) Yes ☐ No ☒ No if PM ☐ National Heritage (s15B & s15C) Yes ☐ No ☒ No if PM ☐ Ramsar wetland (s16 & s17B) Yes ☒ No ☐ No if PM ☐ Threatened Species & Communities (s18 & s18A) Yes ☒ No ☐ No if PM ☐ Migratory Species (s20 & s20A) Yes ☒ No ☐ No if PM ☐ C'wealth marine (s23 & 24A) Yes ☐ No ☒ No if PM ☐ Nuclear actions (s21 & 22A) Yes ☐ No ☒ No if PM ☐ C'wealth land (s26 & s27A) Yes ☐ No ☒ No if PM ☐ C'wealth actions (s28) Yes ☐ No ☒ No if PM ☐ GBRMP (s24B & s24C) Yes ☐ No ☒ No if PM ☐ A water resource – large coal mines and CSG (s24D & s24E) Yes ☐ No ☒ No if PM ☐ C'wealth heritage o/s (s27B & 27C) Yes ☐ No ☒ No if PM ☐
Public Comments	Yes ☒ No ☐ Number: 113 See Attachment C
Ministerial Comments	Yes ☒ No ☐ Who: Victorian Minister for Planning, the Hon Richard Wynne MP. See Attachment D
Assessment Approach Decision	Yes ☐ No ☒ Bilateral Applies ☒

Recommendations:

1. Consider the information in this brief, the referral (Attachment A) and other attachments.

Considered / Please discuss

2. Agree with the recommended decision.

Agreed / Not agreed

3. Agree to the designated proponent.

Agreed / Not agreed

4. Agree the action be assessed under the Assessment Bilateral agreement.

Agreed / Not agreed

5. If you agree to 2 and 4, indicate that you accept the reasoning in the departmental briefing package as the basis for your decision.

Accepted / Please discuss

6. Agree to the fee schedule and justification table (Attachment E) and that the fee schedule (Attachment F) be sent to the proponent.

Agreed / Not agreed

7. Note that Stage 1 of the fee schedule will not be applicable to the proposed action as this stage will be undertaken by the Victorian Government.

Noted / Discuss

8. Sign the notice at Attachment H (which will be published if you make the recommended decision).

Signed / Not signed

9. Sign the letters at Attachment I.

Signed / Not signed

James Barker,
Assistant Secretary,
Assessments and Governance Branch:

Date: 28/11/18

Comments:

BACKGROUND:

Description of the referral

A valid referral was received on 10 October 2018. The action was referred by AGL Wholesale Gas Limited, which has stated its belief that the proposal is not a controlled action for the purposes of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Description of the proposal (including location)

The proposed action involves the development and operation of a Liquefied Natural Gas import facility utilising a Floating Storage and Regasification Unit (FSRU) which will be located at Crib Point, on the Mornington Peninsula, Victoria. The project comprises:

- A FSRU which will be continuously moored at the existing Crib Point Jetty (berth 2) for an operational life of 20 years. The FSRU will remain an operational vessel that will be able to move as required by extreme weather or maintenance. The FSRU will receive LNG from visiting LNG carriers of approximately 300 m in length (that will moor directly adjacent to the FSRU), store the LNG and re-gasify it as required to meet demand within the eastern Australian gas market. It is anticipated that there will be between 15 to 40 LNG carriers per year.

- Regasification will be undertaken by pumping up to 450 ML/day of sea water through heat exchangers to increase the temperature of, and re-gasify, the LNG. Water pumped into the hull will be subject to electrolysis to prevent growth of organisms in the heat exchanger system. AGL provided additional information on 12 October 2018 (Attachment B1) proposing a closed-loop regasification option, whereby LNG would be burnt in boilers to re-gasify LNG. The high greenhouse gas emissions associated with this closed-loop option would mean that it would only be used where required to mitigate impacts to Matters of National Environmental Significance, for example when plankton numbers are high.

- Construction of jetty infrastructure including high pressure gas unloading arms and a high pressure gas flowline mounted to the jetty connecting to a flange on the landside component to allow connection to the Crib Point Pakenham Pipeline Project (EPBC 2018/8297). The pipeline project is to enable the connection of the AGL gas import jetty project to the Victorian Transmission system (VTS).

Related actions

Crib Point to Pakenham Pipeline (EPBC 2018/8297)

The proposed action is related to the Crib Point Pakenham Pipeline Project (EPBC 2018/8297), and the two proposals are interdependent. However, the Crib Point Pakenham Pipeline Project is being undertaken by another person. Referrals for both projects were submitted concurrently.

Upgrades of Crib Point Jetty (action not referred)

The proposed action is also related to upgrades of Crib Point Jetty being undertaken by the Port of Hastings Development Authority. Berth 2 was decommissioned in the 1980s and requires refurbishment and upgrades to facilitate the gas import facility. The Port of Hastings Development Authority has been informed of its obligations under the EPBC Act.

The movement of vessels of various sizes within Western Port Bay has resulted in the creation of a high spot on the seabed in the vicinity of the southern end of the existing Berth 2. The Victorian Regional Channels Authority, as part of their routine maintenance activities for maintaining the jetty will be undertaking activities to flatten the high-spot to accommodate ships, including the FSRU and LNG carriers, at Berth 2.

Description of the environment

The FSRU will be moored at the Crib Point Jetty which is located approximately 63 km south-east of Melbourne CBD within Western Port, a large tidal bay opening into Bass Strait, which incorporated around 260 km of coastline. French Island and Phillip Island are within the bay. The township of Crib Point is located approximately 1.5 kilometres south west of the Jetty, and

the township of Bittern is approximately 3.7 km north-west of the Jetty (see Attachment A, Figure 1).

The Jetty extends 660 metres east into the Western Port Ramsar site. The landside component of the proposal is already highly developed and is not located within the boundary of the Western Port Ramsar site, however the Ramsar site adjoins the north, south and east boundaries of this property. The other berth (berth 1) of Crib Point Jetty is currently used by United Petroleum Australia for the import of automotive fuel.

RECOMMENDED DECISION:

Under section 75 of the EPBC Act you must decide whether the action that is the subject of the proposal referred is a controlled action, and which provisions of Part 3 (if any) are controlling provisions for the action. In making your decision you must consider all adverse impacts the action has, will have, or is likely to have, on the matter protected by each provision of Part 3. You must not consider any beneficial impacts the action has, will have or is likely to have on the matter protected by each provision of Part 3.

The Department recommends that you decide that the proposal is a controlled action, because there are likely to be significant impacts on the following controlling provisions:

- The ecological character of a declared Ramsar wetland (section16 & section17B);
- Listed threatened species and communities (section 18 & section18A);
- Listed migratory species (section 20 & section 20A).

These impacts are discussed respectively below.

Ramsar wetlands

The referral identified that the proposed action includes construction adjacent to, and operation within, the Western Port Ramsar Wetland.

Western Port is a large bay in southern Victoria incorporating around 260 kilometres of coastline, connected to Bass Strait by a wide channel between Flinders and Phillip Island, and a narrow channel between San Remo and Phillip Island. Six rivers from the north and east of the catchment flow into the northern and eastern shores of Western Port and several minor rivers and creeks on the eastern slopes of Mornington Peninsula drain into the western shores.

Western Port is used for commercial fishing and recreational activities such as boating, swimming and fishing.

The Ramsar site has a wide variety of habitat types, ranging from deep channels, seagrass flats, intertidal mudflats, extensive mangrove thickets and saltmarsh vegetation. The white mangrove communities within Western Port are the most well-developed and extensive in Victoria, and are the only large communities situated so far from the Equator.

Western Port is one of the three most important areas for waders in Victoria and the site supports numerous migratory species listed under international migratory bird conservation agreements. High numbers of several migratory species have been recorded to utilise Western Port Ramsar site.

The Western Port Ramsar site meets seven of the nine criteria for listing under the Ramsar Convention. The values associated with each criterion are discussed in Attachment G.

The Wetlands, Policy and Northern Basin Branch reviewed the referral documentation and provided advice about the potential impacts of the proposed action (Attachment G). The advice noted that the proposed action was likely to result in impacts under the following significant impact criteria:

Areas of the wetland being destroyed or substantially modified

The FSRU will be moored at the Crib Point Jetty which is located within the boundary of the Western Port Ramsar site. There is a possibility that nearby seagrass, saltmarsh and mangrove communities will be impacted by the FSRU being permanently moored at the jetty as a result of pollution/contaminants and ship wash. There is also possibility that a number of marine species including Ghost Shrimp, including *Michelea microphylla*, will be impacted from cold water pollution, chlorine contamination and entrenchment.

Substantial and measureable change in the physio-chemical status of the wetland

Re-gasification involves heating LNG using the ambient heat of seawater in Western Port. The cold water discharged from the FSRU heat exchanger will be initially 7°C cooler than ambient sea temperature which has the potential to adversely affect a number of marine species including fish and the Ghost Shrimp.

A plume of cold water will extend from the FSRU across the seabed, depending on prevailing currents. Modelling has shown that AGL's preferred six port discharge design will result in a cold water plume extending 200 metres downstream with a plume width of up to 120 metres. AGL has stated that the only location constantly exposed to cool seawater will be next to the FSRU.

To prevent organisms growing in the heat exchanger, AGL proposes to treat the seawater with electrolysis, which produces chlorine and hypochlorite. The seawater discharged from the FSRU will contain residual chlorine which rapidly reacts in seawater to form a range of short-lived toxicants including hypochlorite and various bromine oxidants.

Effects of residual chlorine chemicals are likely to include impacts to physiological functions and reproductive functions of chlorine sensitive species within approximately 200 metres north and 60 metres east of the FSRU.

Habitat or lifecycle of native species dependant on the wetland being seriously affected

The effects of cold water pollution and chlorine chemicals in the seawater, as well as increased noise, lighting, collisions with ships, wash from ships has the potential to impact a number of species dependant on the Western Port Ramsar site including the Ghost Shrimp, Southern Right Whale, Humpback Whale as well as planktonic and pelagic marine species.

An invasive species that is harmful to the ecological character of the wetland being established or encouraging existing invasive species

The FSRU will result in an increase in the number of foreign vessels entering Western Port Ramsar site which may lead to the introduction or spread of marine pests. The referral documentation states that there is likely to be anywhere from 15 – 40 vessels per year over the 20 year life of the project. While the discharge of ballast water is regulated under the *Biosecurity Act 2015* (Cth), there is still the possibility of invasive species being introduced.

Based on the information available to the Department, the location and nature of the proposed action and the advice received from the Wetlands, Policy and Northern Basin Branch, the Department considers that **significant impacts on the ecological character of the Western**

Port Ramsar site are likely. Further information will be requested through the assessment phase to establish the extent of these impacts.

Listed threatened species and communities

The Department's Environment Reporting Tool (ERT) identifies 60 listed threatened species and ecological communities may occur within 5 km of the proposed action (see the ERT report dated 27 September 2018 at Attachment B2). Based on the location and nature of the action, the Department considers that impacts potentially arise in relation to the following matters.

Southern Right Whale (*Eubalaena australis*) - Endangered

A description of the characteristics and range of the Southern Right Whale can be found in SPRAT: http://apps.internal.environment.gov.au/cgi-bin/sprat/intranet/showspecies.pl?taxon_id=40

Proposed action area

The referral notes that Southern Right Whales are encountered seasonally in Bass Strait, more frequently in western Bass Strait where they calve, and intermittently in central Bass Strait. Southern Right Whales may pass close to the shore all along the central Victorian region, including past the entrance to Western Port. Southern Right Whales have been sighted in Western Port, with two records in the vicinity of Crib Point, but the bay is not known to be an aggregation or breeding area for these whales.

The Migratory Species section provided advice (Attachment G) that the proposed action is adjacent to a known biologically important area for Southern Right Whales. Individuals or pairs are known to occur in Western Port from time to time.

Potential impacts

The Migratory Species section provided advice (Attachment G) that potential impacts to listed cetacean species could occur from the construction and operation of the FSRU and visiting LNG carriers, including operational noise and vibration emissions, potential for collision risk with shipping and the FSRU operational intake and discharge. Noise and vibration from the FSRU and visiting LNG carriers will increase existing impacts of shipping and recreational vessels operating in Western Port.

Avoidance and mitigation measures

The referral does not contain any specific avoidance or mitigation measures to address the potential impacts identified by the Migratory Species Section. Measures proposed by AGL include complying with regulatory approvals, and development of a Project Environmental Management Plan. Specific mitigation measures to reduce environmental impacts are listed at Section 4.1 of the referral at Attachment A.

Conclusion

As the Southern Right Whale is known to occur at Crib Point and there is a biologically important area for the species adjacent to the site, and it is unclear to what extent the impacts of the proposed action would be managed, the Department considers there is a real chance or possibility that the proposed action will reduce the area of occupancy of the species or adversely affect habitat critical to the survival of the species. **The Department considers that a significant impact on the Southern Right Whale is likely**.

Australian Grayling (*Prototroctes maraena*) – Vulnerable

A description of the characteristics and range of the Australian Grayling can be found in SPRAT: http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=26179

Proposed action area

The referral states that the Bass River in south-eastern Western Port and the Bunyip River in north-eastern Western Port are the two most significant freshwater inputs to the Bay.

Adult populations of Australian Grayling are distributed widely in Victorian coastal rivers and streams between the New South Wales border and the Hopkins River in western Victoria, including streams entering the northwest of Western Port.

There appears to be some mixing between larval populations during their marine phase (Crook et al, 2006). It is possible that larvae and juvenile Grayling disperse and migrate between freshwater streams in Western Port and Bass Strait via North Arm and the Western Entrance to Western Port.

Potential impacts

The referral states that the potential impacts of the proposed action are related to:

1. Potential entrainment of:
    a) larvae during dispersion from freshwater streams into the marine environment, and
    b) juveniles that may live in or migrate through Western Port during their six to ten-month marine phase.
2. Potential effects of the cold-water discharge on dispersing larvae and migrating juveniles
3. Potential toxic effects of residual chlorine in the cold-water discharge on dispersing larvae and migrating juveniles.

The impacts to larvae, juvenile and adult populations were assessed in the referral as follows:

- Larvae: Larvae may disperse into the marine environment during high freshwater flows from the Cardinia Creek, Bunyip River and Lang Lang River. The general pattern of water movement in Western Port indicates a high proportion of larvae would likely follow the currents down the eastern side of French Island, not past Crib Point.
- Juveniles: Juvenile Grayling that live in the marine environment and migrate to suitable river systems are independent swimmers and are likely to avoid the intake current.
- Adults: Based on the extent of potential impact pathways and the distribution of adult Grayling, the Project will have negligible effect on adult Grayling populations in freshwater reaches of Victorian streams.

While AGL has determined that the proportion of larvae and juvenile fish likely to occur in the vicinity of the proposed action is low, it is unclear how any proportion of a population at the project site may contribute to the conservation of the population or the species.

Avoidance and mitigation measures

AGL proposes to implement mitigations to limit the entrainment of organisms, such as positioning the intake 5-10 m above the seabed, fitting bar grills over the intake, and using a closed-circuit re-gasification process as required to reduce impacts to matters of national

environmental significance. It has not been determined when the closed circuit re-gasification option may be used, or the level of impact that would be mitigated.

Conclusion

Given the complex lifecycle of the species, it is not clear what constitutes an important population or habitat critical to the survival of the species. As such, potential impacts to larvae through entrainment and changes to water temperature and quality in the vicinity of the FSRU are considered to have a real chance or possibility of disrupting the breeding cycle of an important population or adversely affecting habitat critical to the survival of the species. **The Department considers that a significant impact on the Australian Grayling is likely**.

Eastern Curlew (*Numenius madagascariensis*) – Critically Endangered
Curlew Sandpiper (*Calidris ferruginea*) – Critically Endangered

A description of the characteristics and range of the Eastern Curlew can be found in SPRAT: http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=847

A description of the characteristics and range of the Curlew Sandpiper can be found in SPRAT: http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=856

Both of these species are associated with inter-tidal mudflats along sheltered coasts or in estuaries and share similar impacts from the proposed action.

Proposed action area

The referral documentation notes that the intertidal areas around Crib Point are identified as secondary foraging habitat, with primary foraging habitat extending north from Crib Point. Known roosting sites occur approximately 4 km to the north and south of Crib Point.

Potential impacts

The referral documentation identified a range of potential impacts to marine birds associated with construction and operation of the FSRU. These include increased human activity, noise, light and physical changes to the environment such as habitat loss and changes to sea water currents, temperature and changed chemical composition.

In addition, the Department's Migratory Species Section provided advice that the potential impacts of the action include:

- disturbance to migratory shorebirds, particularly at important roost sites and foraging areas;
- effects on the marine intertidal environment through discharge of contaminants;
- loss or degradation of important habitats.

Avoidance and mitigation measures

The referral does not contain any specific avoidance or mitigation measures to address the potential impacts identified by the Migratory Species Section. Measures proposed by AGL include complying with regulatory approvals, and development of a Project Environmental Management Plan. Specific mitigation measures to reduce environmental impacts are listed at Section 4.1 of the referral at Attachment A.

Conclusion

As habitat for the Eastern Curlew and Curlew Sandpiper is known to occur at Crib Point, and it is unclear to what extent the impacts of the proposed action would be managed, the Department considers there is a real chance or possibility that the proposed action will reduce the area of occupancy of these species or adversely affect habitat critical to the survival of these species. **The Department considers that significant impacts on the Eastern Curlew and Curlew Sandpiper are likely**.

Other listed species

On the basis of all the information available to the Department (including the ERT dated 27 September 2018, which suggests the presence of the following species in the area of the proposal), and without further detailed assessment of potential impacts, the Department considers that there is a real chance or possibility that project activities will significantly impact on the following:

- Dense Leek-orchid (*Prasophyllum spicatum*) – Vulnerable
- Red Knot (*Calidris canutus*) - Endangered
- Great Knot (*Calidris tenuirostris*) – Critically Endangered
- Greater Sand Plover (*Charadrius leschenaultia*) - Vulnerable
- Lesser Sand Plover (*Charadrius mongolus*) - Endangered
- Bar-tailed Godwit (Baueri) (*Limosa lapponica bauera*) – Vulnerable
- Northern Siberian Bar-tailed Godwit (*Limosa lapponica menzbieri*) – Critically Endangered
- Australian Fairy Tern (*Sternula nereis nereis*) – Vulnerable
- Humpback Whale (*Megaptera novaeangliae*) – Vulnerable
- Loggerhead Turtle (*Caretta caretta*) – Endangered
- Green Turtle (*Chelonia mydas*) – Vulnerable
- Leatherback Turtle (*Dermochelys coriacea*) - Endangered

Listed migratory species

As the listed threatened Southern Right Whale, Eastern Curlew and Curlew Sandpiper discussed above are also listed as migratory species, the Department considers that **significant impacts on the listed migratory Southern Right Whale, Eastern Curlew and Curlew Sandpiper are likely.**

Other listed migratory species

On the basis of all the information available to the Department (including the ERT dated 27 September 2018, which suggests the presence of the following species in the area of the proposal), and without further detailed assessment of potential impacts, the Department considers that there is a real chance or possibility that project activities will significantly impact on the following:

- Red-necked *Stint (Calidris ruficollis*)
- Double-banded *Plover (Charadrius bicinctus*)
- Sharp-tailed S*andpiper (Calidris acuminata*)

- Bar-tailed Godwit *(Limosa lapponica)*

The following species are also listed threatened and as such are listed above and will be assessed under their listed status.

- Red Knot (*Calidris canutus*) - Endangered
- Greater Sand Plover (*Charadrius leschenaultia*) - Vulnerable
- Lesser Sand Plover (*Charadrius mongolus*) – Endangered
- Humpback Whale (*Megaptera novaeangliae*) – Vulnerable
- Loggerhead Turtle (*Caretta caretta*) – Endangered
- Green Turtle (*Chelonia mydas*) – Vulnerable
- Leatherback Turtle (*Dermochelys coriacea*) - Endangered

PROTECTED MATTERS THAT ARE NOT CONTROLLING PROVISIONS:

World Heritage properties	The ERT did not identify any World Heritage properties located within or adjacent to the proposed action area, therefore this controlling provision does not apply.
National Heritage places	The ERT did not identify any National Heritage places located within or adjacent to the proposed action area, therefore this controlling provision does not apply.
Commonwealth marine environment	The proposed action does not occur in the vicinity of a Commonwealth marine environment therefore this controlling provision does not apply.
Commonwealth action	The referring party is not a Commonwealth agency, therefore this controlling provision does not apply.
Commonwealth land	The proposed action is not being undertaken on Commonwealth land therefore this controlling provision does not apply.
Nuclear action	The proposed action does not meet the definition of a nuclear action as defined in the EPBC Act therefore this controlling provision does not apply.
Great Barrier Reef Marine Park	The proposed action is located in Victoria, therefore this controlling provision does not apply.
Commonwealth Heritage places overseas	The proposed action is not located overseas, therefore this controlling provision does not apply.
A water resource, in relation to coal seam gas development and large coal mining development	The proposed action is not a coal seam gas or a large coal mining development, therefore this controlling provision does not apply.

SUBMISSIONS:

Public submissions

The proposal was published on the Department's website on 10 October 2018 and public comments were invited until 24 October 2018.

113 public submissions were received on the referral (Attachment C), including multiple late submissions. Late submissions have been included up to 23 November 2018. The submissions raised issues including the following:

- Potential impacts to the environment in Western Port Bay
- Potential impacts to matters of national environmental significance
- Opposition to industrial development at Crib Point
- Potential risk of fire or explosion
- Potential increase in greenhouse gas emissions
- Opposition to the importation of LNG.

Comments from Commonwealth Ministers

By letter dated 10 October 2018, the following Ministers were invited to comment on the referral:

- Mr Lloyd Woodford, delegated contact of the Minister for Defence, the Hon Christopher Pyne MP

No comments were received in response to that invitation.

- The Minister for Energy, the Hon Angus Taylor MP

No comments were received in response to that invitation.

- The Minister for Infrastructure, Transport and Regional Development, the Hon Michael McCormack MP

No comments were received in response to that invitation.

- Minister for Resources and Northern Australia, Senator the Hon Matt Canavan.

The Department of Industry, Innovation and Science, and Geoscience Australia responded by email on 23 October 2018, advising that they had no comment on the referral (Attachment D).

Comments from State/Territory Ministers

By letter dated 10 October 2018, Ms Jane Homewood, delegated contact for the Victorian Minister for Planning, the Hon Richard Wynne MP, was invited to comment on the referral.

The Victorian Department of Environment, Land, Water and Planning responded on 25 October 2018 and noted that the propose action would result in a range of impacts to MNES, and stating that the proposal and the related action Crib Point to Pakenham Pipeline (EPBC 2018/8297) would be assessed under the *Environment Effects Act 1978* (Vic) and the bilateral would apply (Attachment D).

ASSESSMENT APPROACH:

If you agree that the action is a controlled action, you must decide on the approach for assessment in accordance with section 87 of the EPBC Act. The Department recommends that this proposal be assessed under the bilateral agreement, and as such an assessment approach decision is not required.

OTHER MATTERS FOR DECISION-MAKING:

Significant impact guidelines

The Department has reviewed the information in the referral against the *EPBC Act Policy Statement 1.1 Significant Impact Guidelines – Matters of National Environmental Significance* (December 2013) and other relevant material. While this material is not binding or exhaustive, the factors identified are considered adequate for decision-making in the circumstances of this referral. Adequate information is available for decision-making for this proposal.

Precautionary principle

In making your decision under section 75, you are required to take account of the precautionary principle (section 391). The precautionary principle is that a lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.

Bioregional Plans

In accordance with section 176(5), you are required to have regard to a bioregional plan in making any decision under the Act to which the plan is relevant.

There is currently no bioregional plan for the South-east Marine Region. The Department has referred to the *South-east Marine Region Profile: A description of the ecosystems, conservation values and uses of the South-east Marine Region*, which has informed the making of its recommendation.

Cost Recovery

The fee schedule (with justifications) for your consideration is at Attachment E. The fee schedule (without justifications) at Attachment F will be sent to the person taking the action. Please note that, consistent with Regulation 5.13A, Stage 1 fees are not applicable as this part of the assessment will be managed by the Department of Environment, Land, Water and Planning and will not require input from the Commonwealth.

s22 28/11/18

Acting Director
Assessments Victoria and Tasmania
Assessments and Governance Branch
Ph: (02) 6274 s22

s22
Assessments Victoria and Tasmania
Ph: (02) 6274 s22

ATTACHMENTS

A: Referral documentation

B: B1: Additional information relating to re-gasification methods

B2: ERT Report dated 27 September 2018

C: Public comments

D: Ministerial comments

E: Fee schedule (with justifications)

F: Fee schedule (without justifications)

G: Line area advice (Wetlands, Migratory)

H: Decision notice FOR SIGNATURE

I: Letters to the proponent & Ministers FOR SIGNATURE

s22

From: s22
Sent: Tuesday, 16 October 2018 8:10 AM
To: s22 ; s22
Subject: FW: AGL Gas Import Jetty Project - EPBC 2018/8298 [SEC=UNCLASSIFIED]

FYI

From: s47F @agl.com.au]
Sent: Friday, 12 October 2018 6:28 PM
To: s22
Subject: AGL Gas Import Jetty Project - EPBC 2018/8298

Good Afternoon s22

Thanks for your time on the phone to discuss some of the aspects involved with the AGL Gas Import Jetty Project referral.

As discussed, AGL are looking to incorporate an additional process that could be utilised as part of the regasification process of the LNG.

Closed Loop has been included as an alternative technology within the referral.

However, the proposed action as described in the referral only outlines the use of what is referred to as “open loop system” which includes the use of seawater to regasify the LNG. The additional process is referred to as “closed loop system” includes the use of boilers for the regasification process instead of seawater.

One of the concerns which has been raised with an open loop system is the potential impact on larvae and plankton as part of the seawater intake. Whilst the potential impacts are not considered to be significant, AGL are in the process of commencing further marine studies to inform the development of the environmental management measures for the Project by further understanding the larvae and plankton levels.

The purpose of including the closed loop system into the Project is to provide flexibility so that it can be utilised for the regasification process in order to minimise and mitigate the potential impact to the marine environment. In particular, the objective is to enable this system to be used initially if there are any concerns about the potential impacts to the marine environment from the 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.

The reason we do not propose to adopt this technology as the only processing method is because on balance, the open loop system is considered to be the preferred method when taking into account the potential greenhouse gas emissions from the closed loop system. However, we consider it important to be able to potentially use a closed loop system to assist in managing and mitigating any potential impacts on MNES (noting that whilst operating under the closed loop system, there will be no requirement to discharge seawater into Western Port).

On this basis, AGL would like to understand whether the closed loop system needs to be formally incorporated into the referral system to enable either a closed loop or open loop to be used for the regassification process, as described above. In particular, would AGL be required to amend the referral to reflect this change.

Regards

s47F
Senior Manager – Land and Approvals

Development & Construction
Group Operations

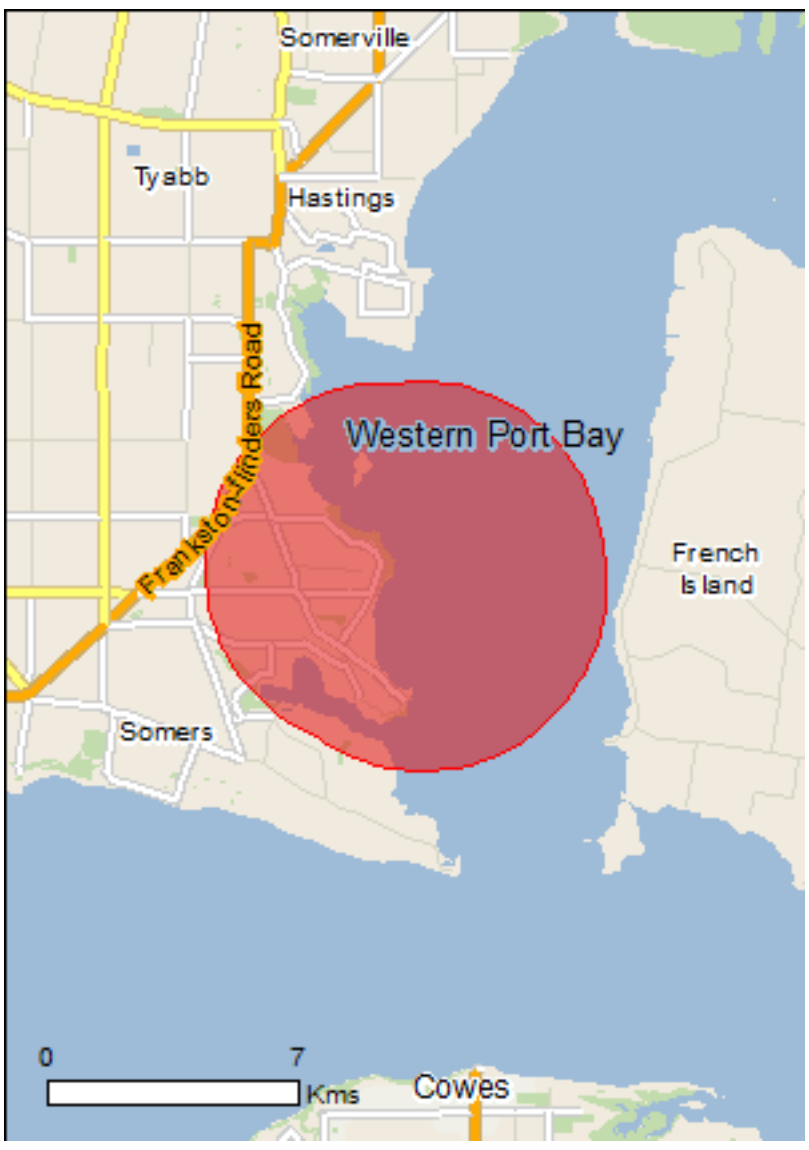
s47F

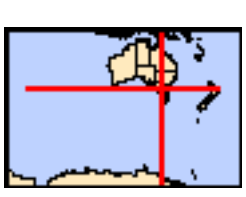
EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

EPBC 2018/8298 - 5km buffer

Report created: 27/09/18 12:38:05





Summary

Matters of National Environment Significance

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Significance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Threatened Ecological Communities:	2
Threatened Species:	58
Migratory Species:	59

Other Matters Protected by the EPBC Act

Commonwealth Lands:	1
Commonwealth Heritage Places:	2
Listed Marine Species:	69
Whales and Other Cetaceans:	7
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	2
Regional Forest Agreements:	None
Invasive Species:	45
Nationally Important Wetlands:	1
EPBC Act Referrals:	8
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Western port	Within Ramsar site

Threatened Ecological Communities		[Resource Information]
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.		
Name	Status	Type of Presence
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area

Threatened Species		[Resource Information]
Name	Status	Type of Presence
BIRDS		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
FISH		
Galaxiella pusilla Eastern Dwarf Galaxias, Dwarf Galaxias [56790]	Vulnerable	Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Prototroctes maraena		
Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area
FROGS		
Litoria raniformis		
Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog [1828]	Vulnerable	Species or species habitat likely to occur within area
MAMMALS		
Antechinus minimus maritimus		
Swamp Antechinus (mainland) [83086]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Isoodon obesulus obesulus		
Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Species or species habitat may occur within area
Petauroides volans		
Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Potorous tridactylus tridactylus		
Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat likely to occur within area
Pseudomys fumeus		
Smoky Mouse, Konoom [88]	Endangered	Species or species habitat may occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
PLANTS		
Amphibromus fluitans		
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat likely to occur within area
Caladenia orientalis		
Eastern Spider Orchid [83410]	Endangered	Species or species habitat may occur within area
Glycine latrobeana		
Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat likely to occur within area
Prasophyllum frenchii		
Maroon Leek-orchid, Slaty Leek-orchid, Stout Leek-orchid, French's Leek-orchid, Swamp Leek-orchid [9704]	Endangered	Species or species habitat likely to occur within area
Prasophyllum spicatum		
Dense Leek-orchid [55146]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis chlorogramma		
Green-striped Greenhood [56510]	Vulnerable	Species or species habitat may occur within area
Pterostylis cucullata		
Leafy Greenhood [15459]	Vulnerable	Species or species habitat may occur within area
Xerochrysum palustre		
Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat likely to occur within area
REPTILES		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Species or species

Name	Status	Type of Presence
		habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
SHARKS		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Migratory Species

[Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely

Name	Threatened	Type of Presence
		to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species habitat known to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Foraging, feeding or related behaviour may occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area
Tringa incana Wandering Tattler [831]		Roosting known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Defence - HMAS CERBERUS

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Natural		
HMAS Cerberus Marine and Coastal Area	VIC	Listed place
Historic		
HMAS Cerberus Central Area Group	VIC	Listed place

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Name	Threatened	Type of Presence
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea gibsoni Gibson's Albatross [64466]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Foraging, feeding or related behaviour may occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area
Heteroscelus incanus Wandering Tattler [59547]		Roosting known to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species

Name	Threatened	Type of Presence
		habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Sterna albifrons Little Tern [813]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche sp. nov. Pacific Albatross [66511]	Vulnerable*	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur

Name	Threatened	Type of Presence
		within area
[Tringa stagnatilis](#) Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
[Xenus cinereus](#) Terek Sandpiper [59300]		Roosting known to occur within area
Mammals		
[Arctocephalus forsteri](#) Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
[Arctocephalus pusillus](#) Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat likely to occur within area
Reptiles		
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area

Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
[Caperea marginata](#) Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
[Delphinus delphis](#) Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
[Eubalaena australis](#) Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
[Lagenorhynchus obscurus](#) Dusky Dolphin [43]		Species or species habitat may occur within area
[Megaptera novaeangliae](#) Humpback Whale [38]	Vulnerable	Species or species habitat may occur within area
[Tursiops aduncus](#) Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
[Tursiops truncatus s. str.](#) Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Crib Point G228 B.R.	VIC
Crib Point G229 B.R.	VIC

Invasive Species

[Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit,

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Carduelis chloris European Greenfinch [404]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Pycnonotus jocosus Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Turdus philomelos Song Thrush [597]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur

Name	Status	Type of Presence
		within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area

Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus scandens Asparagus Fern, Climbing Asparagus Fern [23255]		Species or species habitat likely to occur within area
Carrichtera annua Ward's Weed [9511]		Species or species habitat may occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Genista linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Olea europaea Olive, Common Olive [9160]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Nationally Important Wetlands [Resource Information]

Name	State
Western Port	VIC

EPBC Act Referrals [Resource Information]

Further details about the referral or advice - including its current status if still active - are available in its PINK report; click on the title.

Referral

Title	Reference	Referral Outcome	Assessment Status
Maintenance dredging of Yaringa Channel	2004/1360	NCA	Referral Decision Made-Completed
Bitumen Storage Facility	2007/3676	NCA-PM	Referral Decision Made-POST-APPROVAL/COMPLIANCE
Fabrication and Spooling of Pipe Strings at Crib Point	2008/4127	NCA	Referral Decision Made-Completed
Construct a Recycled Water Pipeline from Somers Treatment Plant to Blue Scope S	2009/4982	NCA	Referral Decision Made-Completed
Pipeline easement regrowth removal	2011/5817	NCA	Referral Decision Made-Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	NCA	Referral Decision Made-Close
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	NCA-PM	Referral Decision Made-Post-Approval
INDIGO Central Submarine Telecommunications Cable	2017/8127	NCA	Referral Decision Made-Close

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environment and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
-Forestry Corporation of NSW
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

s22

From: s22 @delwp.vic.gov.au on behalf of Ees.Referrals@delwp.vic.gov.au
Sent: Thursday, 25 October 2018 3:10 PM
To: s22 ; s22 ; s22
Cc: s22 ; s22 ; s22 @delwp.vic.gov.au; Ees.Referrals@delwp.vic.gov.au; s22 @delwp.vic.gov.au; s22 @delwp.vic.gov.au
Subject: Consolidated comments on Referral - (EPBC 2018/8298) Gas Import Facility, Crib Point, Vic
Attachments: 2018-8298 AV comments.docx; EBPC-8298 - DELWP comments_gas import facility.doc; GAS IMPORT FACILITY, CRIB POINT, VIC PROJECT Decision Letter.pdf; Crib Point and gas import Project - Reasons for Decisionpdf.pdf

Hi,

Please see enclosed comments on EPBC referral: 018/8298 Gas Import Facility, Crib Point, Vic

Bilateral assessment agreement will apply.
-
Aboriginal
Victoria
(attached)

- DELWP Biodiversity (attached)
- Heritage Victoria comments (enclosed)
- EPA advice (enclosed)

Please also find attached, EES referral decision and reasons for decision.

Regards,

s22 **| Business Support Officer| Statutory Support Services**
Planning | Department of Environment, Land, Water and Planning

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

Hi s22

It seems that the extent does not differ between EPBC Referral 2018/8297 and 2018/8298), therefore the comments for both referrals is the same:

As identified in Attachment 13 of the project report by Jacobs Group, there are no VHR or VHI sites within in the study area.

Any revisions to the extent of the works area should be mindful of the VHR place (Former BP Refinery Administration Building, H1016) and VHI site (Woolley's Homestead, H7921-0112) adjacent to the subject area.

Kind regards
s22 **| Archaeologist | Heritage Victoria**

Hi s22
Thank you for the opportunity to comment on this matter. Please see EPA's comments below.

EPBC 2018/8298 – Gas Import Facility, Crib Point, Victoria
SURFACE WATERS
The Crib Point Gas Import Jetty Project would be located entirely within the boundaries of a Ramsar wetland. Seawater is proposed to be extracted from Western Port Bay to facilitate the onboard regassification process, and cooled water containing chlorine would then be discharged into Western Port Bay. Potential impacts to the beneficial uses of water include (but may not be limited to): • the entrainment of planktonic organisms within the seawater intake; • discharge of cooled seawater, 7°C below ambient seawater temperatures; and • discharge of Total Residual Chlorine (including brominated compounds) into the immediate marine environment. There is potential for loss of up to 10% of plankton within 1.5 km of Crib Point due to entrainment of these organisms in the seawater intake for the Floating Storage and Regasification Unit (FSRU). This may have broader implications for the ecological health of the North Arm and Western Port. Attachment 7, *Modelling and Assessment of Biological Entrainment into Seawater Heat Exchange System*, only considered the acute short-term impacts (i.e. mortality of plankton entrained in the inlet). Other more chronic impacts are possible, such as long-term shifts in plankton communities due to changes in abundance and diversity. The broader ecological implications of this shift should be evaluated prior to any project inception. Due the significant volumes of water extracted and discharged back into Western Port, there is potential for short-circuiting (i.e. allowing compromised water from the outlet to be re-extracted back into the inlet, therefore creating a localised 'eddying' effect and changing the hydrodynamics and the capacity of ambient waters to dilute pollutants. This impact does not appear to have been identified or assessed in the reports provided (e.g. Attachments 6, 7, and 9).

Western Port is located within the boundaries of a Ramsar wetland. In this regard the State Environment Protection Policy (Waters) apply to the proposed development.

There are insufficient guidelines for chlorine in marine waters, and what are considered acceptable reductions in ambient seawater temperature. This results in uncertainty in understanding the magnitude of such impacts.

The proponent has stated within the referral that a Construction Environment Management Plan (CEMP) will be developed to mitigate potential construction impacts of the project. Once completed, the CEMP should be reviewed to determine the appropriateness and effectiveness of mitigation measures. All wastewater discharges must comply with the State Environment Protection Policy (Waters). Any new wastewater discharge needs to undertake review by EPA under the Works Approval process.

CONTAMINATED SOILS

The Contaminated Land Assessment (Attachment 12) identifies contamination of soil, sediment and groundwater beneath the landside component of the project site. This is predominantly metals, hydrocarbons and perfluoralkyl substances (PFAS) which is located in fill in isolated areas. The proponent states that because the proposed facilities would be installed above ground, minimal ground disturbance is anticipated.

The project proponent intends to prepare a Construction Environmental Management Plan (CEMP), which will detail how such matters will be handled. The CEMP should include discussion of how any contamination that is encountered in the course of preparatory works or construction will be managed. Thi will need to be developed in accordance with State Environment Protection Policy (Prevention and Management of Contamination of Land), State Environment Protection Policy (Waters), and EPA Publication 275 *Best Practice Management Construction Techniques for Pollution*

Sediment Control. Any PFAS encountered needs to be handled in accordance with the *PFAS National Environment Management Plan*.
OTHER MATTERS
The Cumulative Report (Attachment 3) indicates that landward noise effects from the project would not cause an impact above what is already experienced in the area. Furthermore, the Referral states that due to the lack of nearby sensitive receptors (onshore) that there is low potential for adverse noise effects to the community. Noise resulting from the project would need to comply with applicable environmental regulations, including EPA Publication 1411, *Noise from Industry in Regional Victoria*, and EPA Publication 480 *Environmental Guidelines for Major Construction Sites*.

Feel free to give me a call if you have any questions or would like further information.
Kind regards,

s22

s22
Project Manager - Major Projects
Major Projects & Planning

Submission by the Department of Premier and Cabinet (Aboriginal Victoria)

Referral Number	2018/8298
Title of Proposal	**Crib Point Gas Import**
Proponent	**AGL**
General comments	• The action area is within the Bunurong Land Council Registered Aboriginal Party area. • The referral does include a consideration of Aboriginal cultural heritage. • The referral includes a comprehensive due diligence study (Attachment 1), which concludes: the landside component of the activity location is significantly disturbed (and hence is not an area of cultural heritage sensitivity); and the repurposing of the jetty is consistent with existing land uses and activities (now r. 46[3]); and consequently a CHMP is not required. This conclusion appears to have been reached based on a suitable consideration of all available information. The report also notes that if the project requires an EES, a CHMP would be required in accordance with s. 49 of the *Aboriginal Heritage Act 2006.* • As the project is now an EES, a mandatory CHMP is required. • The Crib point component of the project presents a very low risk to Aboriginal cultural heritage.
Potential for significant adverse effects on matters protected by the EPBC Act	• Aboriginal Victoria is not aware of any Aboriginal cultural heritage of national significance. • It should be noted that all Aboriginal cultural heritage is significant to Traditional Owners.
Effectiveness of proposed avoidance and mitigation measures	• Proposed avoidance and mitigation measures will likely not be required as the action area has very limited potential to include Aboriginal heritage places.
Key uncertainties associated with the referral	• There are no specific uncertainties associated with the referral.

Submission by the Department of Environment, Land, Water and Planning

Referral Number	2018/8298
Title of Proposal	**Gas Import Facility, Crib Point, Vic**
Proponent	**AGL Wholesale Gas Limited**
General comments Consider: - Has there been any prior engagement on this project with DELWP? If so please describe and attach any formal advice provided i.e. advice on planning permits.	There has been extensive engagement with the proponent on this project over the past 12 months. A referral for this project and the associated APA pipeline to Pakenham was submitted to the Department of Environment, Land, Water and Planning (DELWP) under the *Environmental Effects Act 1978* and the Minister for Planning has determined that an Environmental Effects Statement is required for the project (see reasons for decision document attached). DELWP notes that under the EPBC Act, actions that have, or are likely to have, a significant impact on one of nine matters of national environmental significance require approval from the Australian Government Minister for the Environment. Those matters of national environmental significance don't include climate change. DELWP provided input on the draft Landscape and Visual Report January 2018, the Hydrology Report in February 2018, the draft Assessment of effects of cold-water discharge on marine ecosystem at Crib Point Report in March 2018, draft Modelling and assessment of biological entrainment into seawater Heat Exchange System Report in March 2018, the Flora and Fauna Report and Marine Protected Matters report in May 2018, and the draft Plume modelling of discharge from LNG Report in May 2018.
Potential for significant adverse effects on matters protected by the EPBC Act Consider: - Key environmental assets and values that may be affected.	*Potential impacts on Western Port Ramsar Site;* • The proposed floating storage regasification unit (FSRU) is located within the Western Port Ramsar site, the potential impacts on which cannot be determined without further investigation. Key impacts include entrainment of larvae into the heat exchange system, cold water effects and chlorine toxicity effects of the associated discharge, potential disturbance of contaminated sediments and mobilisation of contaminants, and associated turbidity as a result of the velocity of the discharge. There is also the risk of potential impacts on birdlife and other aquatic life and associated impacts on the values of the Western Port Ramsar site. • There will be entrainment of small marine organisms – zooplankton and phytoplankton, larvae and larval fish. Entrainment of up to 10 percent of some plankton and larvae may extend to 750 m north and south from the Floating Storage and Regasification Unit (FSRU), but overall entrainment in the whole of North Arm is expected to be less than 1%. The longer term effects of entrainment on planktonic populations are uncertain and could result in changes to the population structure of the plankton community in the immediate locality of the FSRU. The long term consequences of this change on other components of the marine ecosystem in the vicinity of the FSRU are uncertain. • Potential impact to important species of ghost shrimp, noted in the Western Port Ramsar site management plan as an outstanding characteristic of the soft sediment fauna in Western Port Bay, including the rare species *Paraglypturus Tooradin* and a local endemic known only to Crib Point *Michelea microphylla*. These species have not been found or surveyed for in many years. • Cold water discharge (initially 7 degrees cooler than ambient) mixing zone, with potential impacts on ecosystem values within the mixing zone. Cold water impacts appear to be localised. The proponent's commitment that "AGL will undertake additional studies to further

	define the effects within North Arm and to document the distributions of marine ecosystem components in the vicinity of the discharge, which were previously systematically documented more than 40 years ago." (Assessment of effects of cold-water discharge on marine ecosystem FINAL - 28 September 2018) is supported and can be conditioned accordingly in any future decision. • Residual chlorine concentration in discharge of 0.1mg/L which will reduce to approx. 0.005mg/L after initial dilution, slightly above ANZECC 2000 working value of 0.003mg/L within an approx. 200m mixing zone. After 6 hours of chemical reduction the residual chlorine concentration is predicted to reduce to 0.001-0.003mg/L depending on water temperature. Potential impacts may include toxic effects to sensitive species. • A biofouling inhibitor is proposed to be produced by electrolysis of seawater at the intake to produce a continuous stream of chlorine and hypochlorite, which will be discharged to the local marine environment and exceed freshwater equivalence levels set by ANZECC (2000) and USEPA (1985) over an area up to 400m by 60m (24000 sq m or 2.4 ha).The modelled concentrations of chlorine over this area may have a limited impact on marine invertebrates based on a single species test on Urchins. • The EPA may resolve the appropriate way of licencing and regulating any risk of environmental impacts associated with this discharge in exceedance of national accepted guidance material. • Possible turbidity close to the discharge as a result of velocity of discharge disturbing seabed sediments • Risk of leaks and spills leading to water quality and ecosystem impacts on the Ramsar values • Risk of water quality impacts on Western Port Ramsar site from pipeline and landside jetty works during construction and stormwater from landside jetty during operation - particularly related to sediment flows. Given the proposed mitigation measures, the Hydrology Impact Assessment (Jacobs 2018) states that the hydrological effects of the Project would not have a significant impact on the Western Port Ramsar wetland, subject to detailed design. • Operational noise and vibration – potential for impacts on species such as migratory birds. • Potential introduction of marine pest species Potential for significant adverse effects on the ecological character of the Western Port Ramsar Site. Ramsar values potentially at risk from the FSRU include EPBC-listed threatened species and listed migratory species (see list below), diverse populations of ghost shrimp and general waterbird diversity and abundance. *Potential impacts on EPBC listed species* • Australian Fairy tern (*Sternula nereis nereis*) – Vulnerable – potential disturbance to breeding habitat and localised impacts on foraging habitat from noise and vibration • Bar-tailed godwit (*Limosa lapponica baueri*) – Vulnerable - potential disturbance to breeding habitat and localised impacts on foraging habitat from noise and vibration • Curlew sandpiper (*Calidris ferruginea*) – Critically endangered - potential disturbance to breeding habitat and localised impacts on foraging habitat from noise and vibration • Eastern curlew (*Numenius madagascariensis*) – Critically

	endangered - potential disturbance to breeding habitat and localised impacts on foraging habitat from noise and vibration • Lesser sand plover (*Charadrius mongolus*) – Vulnerable - potential disturbance to breeding habitat and localised impacts on foraging habitat from noise and vibration • Red knot (*Calidris canutus*) – Endangered - potential disturbance to breeding habitat and localised impacts on foraging habitat from noise and vibration • Swift parrot – potential impacts unlikely to be significant • Southern brown bandicoot – possible disturbance to habitat and localised impacts from noise and construction. SBB not identified at the site in targeted surveys and as such impacts are unlikely to be significant (however impacts are potentially significant as a result of the associated pipeline construction – see separate referral). • Grey headed flying fox – potential impacts unlikely to be significant • Marine species including whales, turtles, sharks – impacts unlikely • Australian grayling – larval and juvenile stages exist in the marine environment so possible risk of entrainment, impacts from cold water discharge and toxicity risk from chlorinated discharge. • Dense leek orchid – impacts should be minimised by avoiding heathy woodland habitat in the southern section of the project area. *Potential impacts on migratory species* • Whales, turtles, dolphins, sharks – impacts unlikely • Migratory birds – possible disturbance through noise, vibration, light and increased activity as a result of the operations, the following are regularly supported throughout WesternPort; o Bar-tailed godwit *Limosa lapponica* o Common greenshank *Tringa nebularia* o Curlew sandpiper *Calidris ferruginea* o Eastern curlew *Numenius madagascariensis* o Grey-tailed tattler *Tringa brevipes* o Lesser sand plover *Charadrius mongolus* o Pacific golden plover* *Pluvialis fulva* o Red knot *Calidris canutus* o Red-necked stint* *Calidris ruficollis* o Ruddy turnstone *Arenaria interpres* o Sharp-tailed sandpiper* *Calidris acuminata* o Whimbrel *Numenius phaeopus* *Not considered in referral. The site is also recognised for supporting significant populations of ducks, gulls, fishers, waders and swans.
Effectiveness of proposed avoidance and mitigation measures Consider: - Are the mitigation measures proportionate to risk? - Are the mitigation measures accepted as effective and proven controls? - Do the mitigation measures comply with relevant Commonwealth guidelines for impacted species and listed communities?	Cold water and chlorine impacts appear to be reduced by dilution due to high water movements in local area and the preferred use of multi-discharge ports to further mix. It appears there are limited natural values in the vicinity to be impacted and the department supports the proponent's commitment to "undertake additional studies", and should be consulted in their design, implementation and reporting. Native vegetation south of jetty access road will be avoided noting potential presence of EPBC and FFG listed Dense Leek-orchid – this area will need to be highlighted as a no go zone if the project is approved. Avoiding this area is

	an appropriate mitigation measure. Mitigation measures for potential impacts to the Ramsar values were not described in the reports. There will need to be specific sediment control measures outlined in any Construction Environmental Management Plan to ensure protection of the Ramsar site and seagrass beds from sediment runoff, as well as a detailed stormwater management plan to prevent polluted stormwater from entering sensitive Ramsar habitats. The current use of the Crib Point jetty and adjacent areas, the scale of the proposed impacts associated with the Project and the known information regarding use of the area by marine birds suggests that there are unlikely to be significant impacts to threatened and migratory marine birds. However, further investigation is recommended to confirm this and inform management measures, including: • Collection of any additional survey records for the area such as data held by Birdlife Australia • Appropriate surveys to further detail and understand waterbird use of the Project area and adjacent habitat • Further investigation of current noise levels in comparison to predicated noise levels and literature review of potential impacts • Review the outcome of further investigations on the influence of the FSRU on plankton and larva (refer to CEE 2018a) and consider associated impacts on bird food resources. The extent of these investigations will be determined in consultation with the regulators.
Key uncertainties associated with the referral	Recommended additional studies that would be required to determine whether the project would have a significant impact have been highlighted by AGL's consultants but have not yet been undertaken, including; • Particle entrainment modelling • Plankton and larval sampling program • Investigations of benthic habitats • Seawater monitoring • Ghost shrimp study Regarding biological entrainment, it appears that net water movement in Western Port is not well understood, with one study concluding net water movement is northerly, and a modelling study for the referral concluding a strong southerly drift. Entrainment model estimates are highly variable dependant on model configuration. Without a good understanding of water movement in Western Port and knowledge of the aquatic environment, the potential impacts of the project are difficult to determine. The risk of impacts to waterbirds in the foraging areas adjacent to the jetty and FSRU (from increased noise, light and human activity) is a key uncertainty. For terrestrial species the likelihood of significant impact was determined for each species, but for waterbird species the risk analysis considered marine birds as a group and concluded with a statement that there are unlikely to be significant impacts to threatened and migratory birds. Further work was recommended to confirm this finding: collecting (existing) survey records, appropriate surveys to understand waterbird use of the project area and adjacent habitat, further investigation of current noise levels and compare to

	predicted noise levels (in the project site and adjacent area) and literature review of potential impacts, and review the outcomes of other investigations on the influence of the FSRU on plankton and larva and associated impacts on bird food resources. This work could be used to better quantify the risk to waterbirds, including the six EPBC listed threatened species and 12 listed migratory species that are significant values of the Ramsar, and to the three listed migratory species that have not been considered to date (highlighted in list above). Note that when discussing the proportion of the Ramsar site impacted, it should refer to the area of the same habitat type - not the entire Ramsar site (as it is currently in reports). The ghost shrimp *Paraglypturus Tooradin* and *Michelea microphylla* have not been surveyed for over 50 years and current distribution and abundance is a key knowledge gap. Further investigations of distribution and potential impacts were recommended. The risk to nationally listed Australian Grayling to entrainment into the heat exchange system of the FSRU requires further investigation. Risk of impacts to Ramsar site from increased shipping, including accidental discharge of fuels and oils has not been addressed (and any other impacts likely in the event of an accident). DELWP would expect that a thorough risk assessment process is considered that includes likelihood of accidental release under current shipping rates and future increased shipping rates. The contamination assessment did not investigate the potential for marine sediment contamination and potential mobilisation of contaminants to sensitive areas such as seagrass be ds. <u>Floodplain management:</u> Sea level rise analysis Jacobs (2018) <u>AGL Gas Import Jetty Project AGL Wholesale Gas Limited Hydrology Impact Assessment</u> investigated sea level rise impacts and have referred to the Victorian Coastal Inundation Dataset. This is appropriate. However further information is available incorporating storm tide impacts. The Western Port Local Coastal Hazard Assessment (LCHA) provides information on the extent of coastal hazards and their physical impacts for the Western Port coastal environment. Information has been collected on inundation hazards (storm surge and catchment inflows) using modelling for different sea level rise scenarios. The following two scenarios are available for the 0.2m sea level rise scenario. • WESTERN PORT 1% AEP 0.2M SLR INUNDATION - This data represents the extent of storm tide inundation for the 1% Average Exceedance Probability (AEP) storm tide with the +0.2 m sea level rise scenario. (based on hydrodynamic modelling) • WESTERN PORT 10% AEP 0.2M SLR INUNDATION - This data represents the extent of shoreline inundation for the 10% Average Exceedance Probability (AEP) catchment generated flood under a +20cm sea level rise scenario. Data is available from: https://www.data.vic.gov.au

	Project reports are available here: http://www.seccca.org.au/project/western-port-local-coastal-hazard-assessment/ Accordingly, this statement is incorrect "Figure 4.3 ... does not include a 2040 Storm Tide extent as this information is not currently available" (p. 6), as sea level rise mapping incorporating storm tide is available for the study area. It is unclear whether consideration of the LCHA data will have a material impact on the results of the analysis. Planning timeframe Jacobs (2018, p. 6) write "the Project is intended to operate for approximately 20 years, the sea level rise predictions for 2040 have been selected as the most relevant". This planning timeframe is inconsistent with Victoria Planning Provisions. Clause 13 specifies that developments should reflect planning for sea level rise "of not less than 0.8 metres by 2100 and allow for the combined effects of tides, storm surges, coastal processes and local conditions such as topography and geology when assessing risks and coastal impacts associated with climate change". To understand whether consideration of a longer time frame will have a material impact on the results of the analysis, it would be necessary to map and compare the two datasets (0.8 m sea level rise, compared to 0.2 m sea level rise). It is likely that the inundation extent cause by 0.8 m sea level rise will encroach further into the site of interest. Conclusions • Jacobs (2018) has not used the full range of available data to assess sea level rise impacts. • The planning timeframe for sea level rise that has been used is inconsistent with the Victoria Planning Provisions. It is unclear whether consideration of these two issues will have a material impact on the results of the analysis.

Department of Environment, Land, Water and Planning

FOI 190719
Document 1c(iii)

8 Nicholson Street
East Melbourne Victoria 3002
delwp.vic.gov.au

s22
Acting Director Victoria Tasmania Assessments Section
Department of the Environment and Energy
GPO Box 787
CANBERRA ACT 2601

Dear s22

CRIB POINT TO PAKENHAM GAS PIPELINE PROJECT – EPBC 2018/8297
GAS IMPORT FACILITY, CRIB POINT, VIC PROJECT – EPBC 2018/8298

APA Transmission PTY LTD and AGL Wholesale Gas Limited recently sought the Minister for Planning's (the Minister) advice on the need for an environment effects statement (EES) under the *Environment Effects Act 1978* (EE Act) for the proposed Gas Import Jetty Facility and Crib Point to Pakenham Gas Pipeline Project.

The Minister has determined, under section 8B(3)(a) of the Act, that the project will be assessed via **an EES**, consistent with the requirements set out under Schedule 1 of the Bilateral (assessment) Agreement between Victoria and the Commonwealth. Please refer to the attached Reasons for Decision for further information on the EES decision.

Should either or both actions (EPBC 2018/8297 and EPBC 2018/8298) require assessment and approval under the *Environment Protection and Biodiversity Conservation Act 1999*, they will be assessed under the Bilateral Agreement in accordance with item 2.1(b) of Schedule 1.

If you would like further information on this matter, please contact me by phone (03) 8392 s22 or email s22 @delwp.vic.gov.au.

Yours sincerely

s22
Principal Advisor Impact Assessment

VICTORIA State Government

Attachment 2

For Public Notice via Internet

REASONS FOR DECISION UNDER *ENVIRONMENT EFFECTS ACT 1978*

Project name: Gas Import Jetty Facility and Crib Point to Pakenham Gas Pipeline

Proponent: AGL (Gas Import Jetty Facility) and APA (Gas Pipeline)

Description of Project:

The proposal includes: a liquified natural gas (LNG) import facility, with continuous mooring of a floating storage and regasification unit (FSRU) at Crib Point; the construction of ancillary topside jetty infrastructure including high pressure gas unloading arms and a high pressure gas flowline mounted to the jetty connecting to a flange on the landside component; and construction of a high pressure gas pipeline of approximately 56 km in length (including associated end of line and mid-line pipeline facilities) connecting the import facility at Crib Point to the Victorian Transmission System east of Pakenham. The pipeline is intended to be bi-directional, allowing for the future supply of gas to emerging communities along the pipeline route. The FSRU will receive LNG from LNG carriers moored alongside the FSRU, store the LNG and re-gasify it as required to meet market demands. The import facility project life is anticipated to be approximately 20 years.

Decision:

The Minister for Planning has decided that an environment effects statement (EES) is required, for the Gas Import Jetty Facility and Crib Point to Pakenham Gas Pipeline proposal, as described in the referral accepted on 13 September 2018.

Reasons for Decision:

- The project has the potential for significant environmental effects, including on native vegetation, habitat of threatened terrestrial and aquatic species listed under the *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 effects and other residual effects could be assessed and managed through a range of separate statutory processes, an EES is warranted to help ensure the proposal's effects and relevant uncertainties are rigorously investigated as part of an integrated assessment process prior to any statutory approval decisions.

Date of Decision:

8/10/18

FOI 190719
Document 1d

s22

From: EPBC Referrals
Sent: Tuesday, 23 October 2018 3:00 PM
To: s22
Cc: s22 ; s22 ; EPBC Referrals
Subject: FW: Invitation to comment on Referral - (EPBC 2018/8298) - Gas Import Facility, Crib Point, Vic [SEC=UNCLASSIFIED]

Hi s22

For your information and appropriate action, below are DIIS' comments on the Gas Import Facility at Crib Point.

Kind regards,

s22
Referrals Gateway
Department of the Environment and Energy
P: 02 6274 s22 | E: EPBC.Referrals@environment.gov.au

From: EPBC [mailto:EPBC@industry.gov.au]
Sent: Tuesday, 23 October 2018 2:09 PM
To: EPBC Referrals ; EPBC
Cc: s22 ; s22 ; s22
Subject: RE: Invitation to comment on Referral - (EPBC 2018/8298) - Gas Import Facility, Crib Point, Vic [SEC=UNCLASSIFIED]

Good afternoon s22

Thank you for the opportunity to comment on EPBC referral 2018/8298 – Gas Import Facility, Crib Point.

The Department of Industry, Innovation and Science, and Geoscience Australia have no comment on EPBC Referral 2018/8298.

Warm regards,

s22
Policy Officer, Mining and Investment
Onshore Minerals | Resources Division
02 6213 s22 I s22 @industry.gov.au

Department of Industry, Innovation and Science

UNCLASSIFIED

From: EPBC Referrals [mailto:EPBC.Referrals@environment.gov.au]
Sent: Thursday, 11 October 2018 9:32 AM
To: EPBC <EPBC@industry.gov.au>
Cc: EPBC Referrals <EPBC.Referrals@environment.gov.au>; s22 @industry.gov.au>
Subject: Invitation to comment on Referral - (EPBC 2018/8298) - Gas Import Facility, Crib Point, Vic [SEC=UNCLASSIFIED]

Good morning

We are sending you the attached link to a referral received for consideration under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for your comments, as it falls within your area of interest: http://epbcnotices.environment.gov.au/invitations/

Formal notification of this referral is attached to this email.

Any comment should be sent by 24 October 2018 via:

by letter s22
Acting Director
Victoria / Tasmania Assessments Section
Assessments & Governance Branch
Department of the Environment and Energy
GPO Box 787
CANBERRA ACT 2601

by email s22 @environment.gov.au

Regards

Referrals Gateway
Governance and Business Support Section

Australian Government
Department of the Environment and Energy

EPBC Act Cost Recovery - Fee Schedule

EPBC No: 2018/8298

Date of Fee Schedule: Nov. 15, 2018

Project title: Gas Import Facility, Crib Point, Vic

Assessment method: Bilateral Agreement / Accredited Assessment Process

Fee Schedule

STAGE FEES	Base fee	PART A Complexity costs (A-L, P)	PART B Complexity costs (MNO)	Total
Stage 1	$3,961	$9,754	$0	$13,715
Stage 2	$3,655	$15,444	$0	$19,099
Stage 3	$2,175	$16,257	$10,982 (Estimate)	$29,414 (Estimate)
Stage 4	$8,355	$39,831	$10,982 (Estimate)	$59,168 (Estimate)
TOTAL PROJECT COST	$18,146	$81,288	$21,964 (Estimate)	$121,398 (Estimate)

Notes:

- For assessments by environmental impact statement - If standard guidelines are used under Section 101A(2)(a) of the EPBC Act, the Stage 1 fee will not be applicable.
- For assessments by public environmental report - If standard guidelines are used under Section 96B of the EPBC Act, the Stage 1 fee will not be applicable.
- If no further information is requested under section 95A of the EPBC Act, the Stage 1 and 2 fees will not be applicable.
- The Department advises applicants of the maximum liability for Part B complexity fees at the time of the assessment approach decision, based on the information provided in the referral documentation. Applicants have the opportunity to reduce the Part B complexity fees during the assessment process by improving the quality of information provided to the Department during Stage 2 of the assessment. These Part B complexity fees are confirmed when all the assessment documentation is provided in Stage 2, and are not payable until Stages 3 and 4 of the assessment.

Fee Breakdown

			COMPLEXITY	FEE
	CONTROLLING PROVISIONS			
Part A Fees	A	Listed threatened species and ecological communities Real chance or possibility to significantly impact 16 species, impacts to several marine species not well understood	Very High	$48,931
	B	Listed migratory species Real chance or possibility to significantly impact 4 migratory species not listed as threatened under EPBC Act	Moderate	$6,742
	C	Wetlands of international importance Type and extent of impacts are not well known, and success of management is uncertain.	High	$25,615
	D	Environment of the Commonwealth marine area Not applicable.	None	$0
	E	World heritage properties Not applicable.	None	$0
	F	National heritage places Not applicable.	None	$0
	G	Nuclear actions Not applicable.	None	$0
	H	Great Barrier Reef Marine Park Not applicable.	None	$0
	I	Water Resources Not applicable.	None	$0
	J	Commonwealth Land/Commonwealth Agency/Commonwealth Heritage Places Overseas Not applicable.	None	$0
	NUMBER OF PROJECT COMPONENTS			
	K	Number of project components The project is the development and operation of an FSRU.	Low	$0

			COMPLEXITY	FEE
	L	Coordination with other legislation Will be assessed under bilateral agreement with Victoria	Low	$0
Part B Fees: estimate (to be confirmed prior to Stage 3)		**ADEQUACY OF INFORMATION AND CLARITY OF PROJECT SCOPE**		
	M	Site surveys/Knowledge of environment Surveys still required for several species.	Moderate	$10,982
	N	Management measures (including mitigation and offsets) Management measures are proposed by require refinement and clarification to improve understanding of effectiveness.	Moderate	$10,982
	O	Project scope The project is the installation and operation of FSRU with no alternatives proposed.	Low	$0
		EXCEPTIONAL CIRCUMSTANCES		
Exceptional circumstances	P	Exceptional circumstances N/A	False	$0
TOTAL COMPLEXITY FEES (Estimate)				$103,252
BASE FEE				$18,146
TOTAL FEE (Estimate)				$121,398

Potential fees for contingent and post-approval activities (if required)

The Department will notify you if a contingent activity fee is applicable due to an additional statutory step being required under the *Environment Protection and Biodiversity Conservation Act 1999*.

Post-approval fees

Evaluation of new Action Management Plan (per management plan) ($2,690)

Contingent Fees

Request additional information for referral or assessment approach decision ($1,701)

Variation to the proposed action ($1,353)

Reconsideration of the controlled action or assessment approach decision at the applicant's request ($6,577)

Request additional information for approval decision (assessment on referral information, preliminary documentation or bilateral/accredited assessment) ($1,701)

Request additional information for approval decision (assessment by environmental impact statement or public environment report) ($7,476)

Variation of conditions ($2,690)

Variation of an action management plan under conditions of approval ($2,690)

Administrative variation of an action management plan under conditions of approval ($710)

Transfer of approval to new approval holder ($1,967)

Extension to approval expiry date ($2,690)

Australian Government
Department of the Environment and Energy

EPBC Act Cost Recovery - Fee Schedule

EPBC No: 2018/8298

Date of Fee Schedule: Nov. 15, 2018

Project title: Gas Import Facility, Crib Point, Vic

Assessment method: Bilateral Agreement / Accredited Assessment Process

Fee Schedule

STAGE FEES	Base fee	PART A Complexity costs (A-L, P)	PART B Complexity costs (MNO)	Total
Stage 1	$3,961	$9,754	$0	$13,715
Stage 2	$3,655	$15,444	$0	$19,099
Stage 3	$2,175	$16,257	$10,982 (Estimate)	$29,414 (Estimate)
Stage 4	$8,355	$39,831	$10,982 (Estimate)	$59,168 (Estimate)
TOTAL PROJECT COST	$18,146	$81,288	$21,964 (Estimate)	$121,398 (Estimate)

Notes:

- For assessments by environmental impact statement - If standard guidelines are used under Section 101A(2)(a) of the EPBC Act, the Stage 1 fee will not be applicable.
- For assessments by public environmental report - If standard guidelines are used under Section 96B of the EPBC Act, the Stage 1 fee will not be applicable.
- If no further information is requested under section 95A of the EPBC Act, the Stage 1 and 2 fees will not be applicable.
- The Department advises applicants of the maximum liability for Part B complexity fees at the time of the assessment approach decision, based on the information provided in the referral documentation. Applicants have the opportunity to reduce the Part B complexity fees during the assessment process by improving the quality of information provided to the Department during Stage 2 of the assessment. These Part B complexity fees are confirmed when all the assessment documentation is provided in Stage 2, and are not payable until Stages 3 and 4 of the assessment.

Fee Breakdown

		COMPLEXITY	FEE
	CONTROLLING PROVISIONS		
Part A Fees	A Listed threatened species and ecological communities	Very High	$48,931
	B Listed migratory species	Moderate	$6,742
	C Wetlands of international importance	High	$25,615
	D Environment of the Commonwealth marine area	None	$0
	E World heritage properties	None	$0
	F National heritage places	None	$0
	G Nuclear actions	None	$0
	H Great Barrier Reef Marine Park	None	$0
	I Water Resources	None	$0
	J Commonwealth Land/Commonwealth Agency/Commonwealth Heritage Places Overseas	None	$0
	NUMBER OF PROJECT COMPONENTS		
	K Number of project components	Low	$0
	COORDINATION WITH OTHER LEGISLATION		
	L Coordination with other legislation	Low	$0
Part B Fees: estimate (to be confirmed prior to Stage 3)	**ADEQUACY OF INFORMATION AND CLARITY OF PROJECT SCOPE**		
	M Site surveys/Knowledge of environment	Moderate	$10,982
	N Management measures (including mitigation and offsets)	Moderate	$10,982
	O Project scope	Low	$0
Exceptional circumstances	**EXCEPTIONAL CIRCUMSTANCES**		
	P Exceptional circumstances	False	$0
TOTAL COMPLEXITY FEES (Estimate)			$103,252
BASE FEE			$18,146
TOTAL FEE (Estimate)			$121,398

Potential fees for contingent and post-approval activities (if required)

The Department will notify you if a contingent activity fee is applicable due to an additional statutory step being required under the *Environment Protection and Biodiversity Conservation Act 1999*.

Post-approval fees

Evaluation of new Action Management Plan (per management plan) ($2,690)

Contingent Fees

Request additional information for referral or assessment approach decision ($1,701)

Variation to the proposed action ($1,353)

Reconsideration of the controlled action or assessment approach decision at the applicant's request ($6,577)

Request additional information for approval decision (assessment on referral information, preliminary documentation or bilateral/accredited assessment) ($1,701)

Request additional information for approval decision (assessment by environmental impact statement or public environment report) ($7,476)

Variation of conditions ($2,690)

Variation of an action management plan under conditions of approval ($2,690)

Administrative variation of an action management plan under conditions of approval ($710)

Transfer of approval to new approval holder ($1,967)

Extension to approval expiry date ($2,690)

FOI 190719
Document 1g

s22

From: s22
Sent: Friday, 26 October 2018 12:44 PM
To: s22
Cc: s22 ; s22
Subject: FW: EPBC 2018/8298 - Crib Point Gas Import Facility Line Advice Request [SEC=UNCLASSIFIED]
Attachments: esd - vic - gas import facility, crib point 2018_8298 - cleared advice.docx

Dear s22

Please find attached cleared advice from Migratory Species Section regarding EPBC 2018/8298 - Crib Point Gas Import Facility, Vic.

Regards, s22

s22
Migratory Species
Biodiversity Conservation Division (BCD)
Department of the Environment and Energy
Australian Government
Phone: +61 2 6274 s22
Email: s22 @environment.gov.au
Web: http://www.environment.gov.au/biodiversity/migratory-species

From: s22
Sent: Friday, 26 October 2018 12:24 PM
To: s22
Cc: s22
Subject: RE: EPBC 2018/8298 - Crib Point Gas Import Facility Line Advice Request [SEC=UNCLASSIFIED]

Cleared ☺

From: s22
Sent: Friday, 26 October 2018 12:07 PM
To: s22 @environment.gov.au>
Cc: s22 @environment.gov.au>
Subject: FW: EPBC 2018/8298 - Crib Point Gas Import Facility Line Advice Request [SEC=UNCLASSIFIED]

Hi s22

Grateful if you could clear the attached advice regarding EPBC 2018/8298 - Crib Point Gas Import Facility, Vic.

Regards, s22

From: s22
Sent: Thursday, 11 October 2018 4:46 PM

To: Species Conservation Referrals <SpeciesConservationReferrals@environment.gov.au>
Cc: s22 @environment.gov.au>; s22 @environment.gov.au>
Subject: EPBC 2018/8298 - Crib Point Gas Import Facility Line Advice Request [SEC=UNCLASSIFIED]

Hi, I am writing to request comments on the following EPBC project:

EPBC Number: EPBC 2018/8298

Referral Title: Gas Import Facility, Crib Point, Vic

Project stage: Referral

Project Documentation:

Documentation found here.

Potential Issues:

- Listed Migratory Species.

Timeframe for providing advice:

Please email your advice to the primary EAB contact officer by **25 October 2018**.

Name of primary ESD contact officer:

s22 @environment.gov.au)

Name of secondary ESD contact officer:

s22 @environment.gov.au)

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

PROTRECTED SPECIES AND COMMUNITIES BRANCH

MIGRATORY SPECIES SECTION EPBC ACT REFERRAL ADVICE

Referral: EPBC 2018/8298 – Gas Import Facility, Crib Point (Vic)

Issues to note and potential impacts

The proposed action is to develop a Liquefied Natural Gas (LNG) import facility, utilising a Floating Storage and Regasification Unit (FSRU) to be located at Crib Point, Victoria.

The proposed action comprises actions, including:
• The continuous mooring of a FSRU at the existing Crib Point Jetty, which will receive between 12 to 40 LNG carriers per year of approximately 300 m in length;
• The construction of ancillary topside jetty infrastructure, including high pressure gas unloading arms and a high pressure gas flowline mounted to the jetty and connecting to a flange on the landside component to allow connection to the Crib Point Pakenham Pipeline Project (Pipeline Project is a separate referral).

The Crib Point jetty is located within Western Port, a large tidal bay opening into Bass Strait. Western Port is a wetland of international significance and is included in the Australian Ramsar estate. Western Port is also an internationally significant site for EPBC Act listed threatened and migratory birds, including the critically endangered Eastern Curlew and Curlew Sandpiper. Western Port is internationally important habitat for Sharp-tailed Sandpiper, Red-necked Stint, Common Greenshank and Double-banded Plover.

Potential adverse impacts to threatened and migratory shorebirds include:
- The potential of disturbance to migratory shorebirds, particularly at important roost sites and foraging areas;
- The potential effects on the marine intertidal environment through discharge of contaminants;
- The loss or degradation of important habitats.

Efforts should be made to avoid loss or degradation of migratory shorebird habitat that may occur through the introduction of exotic species (ballast water), changes to hydrology or water quality (including toxic inflows), exposure to litter or pollutants. Best practice waste management should be implemented.

Measures to mitigate against the impacts of disturbance need to be determined on a case-by-case basis, as different species of shorebird respond differently to disturbance. Options for mitigating impacts from disturbance include:

- the use of buffer zones around important areas for migratory shorebirds. Appropriate buffers will depend on local circumstances, including the species present, type of habitat (ephemeral or permanent), habitat use (roosting or foraging) and scale of disturbance. As a guide, studies have recommended buffer zones with widths ranging from 165 metres to 255 metres. A minimum of 200 metres is required for Eastern Curlew (http://www.avianbuffer.com/).
- the construction of appropriate barriers, such as fences around important habitat to restrict access. Ideally, there should be no public access (by humans and/or domestic animals) to areas identified as important to migratory shorebirds. Where this is not feasible, particular recreational activities may need to be excluded or it may be necessary to limit the number of people using an area at one time and/or limit activities during the period between October and March (when the majority of shorebirds will be present).

The proposed action is adjacent to a known biological important area for Southern Right Whales. Individuals or pairs are known to occur in Western Port from time to time. Potential impacts to listed cetacean species could occur from the construction and operation of the

FSRU and visiting LNG carrier, including operational noise and vibration emissions, potential for collision risk with shipping and the FSRU operational intake and discharge. Noise and vibration from the FSRU and visiting LNG carriers will increase existing impacts of shipping and recreational vessels operating in Western Port.

Conclusion

On the basis of the available information, the proposed action is likely to result in adverse impacts to listed threatened and migratory species.

Prepared by: s22

Cleared by: s22, Director, Migratory Species Section

Date: 26/10/2018

DEPARTMENT OF THE ENVIRONMENT

COMMONWEALTH ENVIRONMENTAL WATER OFFICE

EPBC ACT REFERRAL ADVICE FROM WETLANDS SECTION

REFERRAL: EPBC 2018/8298

DATE DUE BACK TO ESD: 26 OCTOBER 2018

AGL GAS IMPORT JETTY – WESTERN PORT

Brief Description of Proposal

The proposed action involves the development of a Liquefied Natural Gas (LNG) import facility utilising a Floating Storage and Regasification Unit (FSRU) which will be located at Crib Point, Victoria. The project comprises:

- A FSRU which will be continuously moored at the existing Crib Point Jetty (berth 2). The FSRU will receive LNG from visiting LNG carriers (that will moor directly adjacent to the FSRU), store the LNG and re-gasify it as required to meet demand within the eastern Australian gas market. It is anticipated that there will be between 12 to 40 LNG carriers per year.

- Construction of jetty infrastructure including high pressure gas unloading arms and a high pressure gas flowline mounted to the jetty connecting to a glange on the landside component to allow connection to the Crib Point Pakenham Pipeline Project (EPBC 2018/8297). The pipeline project is to enable the connection of the AGL Gas Import Jetty Project to the Victorian Transmission System.

The Project life is anticipated to be approximately 20 years. However, it may be extended pending security and stability of gas supply. The FSRU will remain an operational vessel, able to be moved as required, such as in extreme weather or for maintenance. The FSRU will be leased by AGL from a third party.

Further Information

LNG will be offloaded from vessels via flexible hoses over a period of approximately 24 hours. It will then be stored on the FSRU at approximately -162°C in cryogenic storage tanks which maintains its liquid state until it is required for the gas network. LNG will be pressurised and vaporised in a regasification system on board the FSRU, as required to meet demand. The FSRU uses heat from seawater, which will be drawn into the FSRU through the vessel sea chest or dedicated ports in the hull and circulated through heat exchangers. This is to return the LNG to a gaseous state.

If operating at full capacity, a daily volume of up to 450 ML/day of seawater from Western Port will be pumped through the heat exchangers. However, it is more than likely that the FSRU will not be running at capacity and will be using 300 ML/day.

The water will be returned to Western Port via a six-port discharge arrangement and is estimated to be initially 7°C cooler than the ambient seawater temperature.

To prevent the growth of marine organisms in the heat exchange system on the FSRU, the seawater intake will be subject to an electrolysis process which will produce chlorine and hypochlorite. The concentration of residual chlorine at the discharge from the FSRU will be 0.1 mg/L (100 ppb) and within approximately 20 seconds from the time of discharge the initial dilution process will reduce the concentration to 0.005 mg/L, slightly above the ANZECC 2000 trigger value for freshwater environments of 0.003 mg/L for 95 % ecosystem protection (there is no applicable ANZECC guideline trigger value for chlorine in marine environments).

Similarly, to the temperature effects, the chlorine concentration in the water discharge will decrease along a gradient from the points of discharge and will reach ANZECC and USEPA guideline objectives within 200 m of the points of discharge. The regasification system will be capable of delivering 500 million standard cubic feet per day of "firm" gas at high reliability and up to 750 million standard cubic feet per day on an "as available" basis with lower reliability. This is the equivalent to more than the current Victorian natural gas market.

Related Projects

Crib Point Pakenham Gas Pipeline Project – EPBC 2018/8297)

The pipeline project involves the development of a bi-directional pipeline between Pakenham and Crib Point, by APA and will allow the connection of the Project to the Victorian Transmission System (VTS). The pipeline project comprises:

- Approximately 55 km of high pressure natural gas transmission pipeline from the end of line facilities at Crib Point Jetty to a new connection point into the VTS at Pakenham.
- End of line facilities, situated adjacent to Crib Point Jetty, including metering, pigging facility, odourant facility, nitrogen storage and injection, gas analysers and vent stack.
- End of line facilities situated at Pakenham including scarper station, metering, filtration, heating, pigging facility and a vent stack.
- Two main line valves.
- Cathodic protection system.

Crib Point Jetty Upgrade

The Crib Point Jetty extends approximately 500 m into the bay and consists of two berths which are located at the northern and southern portions of the jetty. The northern berth (Berth 1) is currently in operation for the import of motor spirit and automotive diesel by United Petroleum Australia (United). The southern berth (Berth 2) ceased operation in the 1980s and is currently decommissioned.

The Crib Point Jetty Upgrade is being undertaken by Port of Hastings and comprises the refurbishment (strengthening and modifications) of the existing Crib Point Jetty, and construction of additional mooring and berthing dolphins which provide a suitable berth to receive ships like the FSRU and a double-berthed LNG carriers.

According to AGL, the jetty works are not dependent on the FSRU proceeding as the refurbished jetty could be utilised for an alternative shipping activity and is therefore not part of the proposed action. Therefore it is not subject to this referral and has not been referred under the EPBC Act.

Flattening the Seabed

The movement of vessels of various sizes along Western Port Bay 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. Victorian Regional Channels Authority, as part of their routine maintenance activities for maintaining operation of the jetty will 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. As such, flattening the seabed does not form part of the activities comprising the proposed action as described in this Referral.

Cumulative Impact Assessment

A cumulative assessment has been prepared for both projects by AECOM. The assessment concluded that the pipeline project is unlikely to result in significant additive effects to the floating storage regasification project due to its predominantly onshore location. Most of the potential impacts on wetland values are related to the floating storage and regasification unit and therefore the pipeline will have no additional affect.

The wetlands section considers that the two projects are related and should be assessed under the EPBC Act at the same time. This is to ensure potential cumulative/facilitated impacts to the ecological character of the Western Port Ramsar site are adequately addressed.

How far is the proposal from a Ramsar site:

The FSRU is located within the Western Port Ramsar site.

Western Port is a large bay in southern Victoria incorporating around 260 kilometres of coastline, connected to Bass Strait by a wide channel between Flinders and Phillip Island, and a narrow channel between San Remo and Phillip Island. Six rivers from the north and east of the catchment flow into the northern and eastern shores of Western Port and several minor rivers and creeks on the eastern slopes of the Mornington Peninsula drain into the western shores.

The Ramsar site has a wide variety of habitat types, ranging from deep channels, seagrass flats, intertidal mudflats, extensive mangrove thickets and saltmarsh vegetation. The white mangrove communities within Western Port are the most well-developed and extensive in Victoria, and are the only large communities situated so far from the Equator. Threatened plant species that are found within the Ramsar site include dense leek-orchid, creeping rush, and tiny arrow grass.

Western Port is one of the three most important areas for waders in Victoria and the site supports numerous migratory species listed under international migratory bird conservation agreements. High numbers of Eastern Curlew, Whimbrel, Bar-tailed Godwit, Grey-tailed Tattler, Greenshank and Terek Sandpiper have been recorded at the site. Nationally threatened species that utilise Western Port include the Orange-bellied Parrot, Swift Parrot, Helmeted Honeyeater, Little Tern, Southern Right

Whale, and Humpback Whale. The site supports the globally threatened Fairy Tern which is listed as vulnerable on the IUCN Red List of Threatened Species.

A number of Indigenous cultural heritage sites on the shores of Western Port have been identified. Currently, Western Port is used for commercial fishing and recreational activities such as boating, swimming and fishing.

The Western Port Ramsar site meets seven of the nine criteria:

Criterion 1: The appropriate bioregion for the site is the Bass Strait Shelf IMCRA1 Province which extends from Apollo Bay to Waratah Bay in Victoria including Port Phillip Bay and Western Port, the entire north coast of Tasmania and the waters. Although there is not a complete inventory of wetlands and coastal ecosystems across the bioregion, there is evidence to suggest that Western Port contains good representatives of three Ramsar wetland types2: B (Marine subtidal aquatic beds (underwater vegetation), G (intertidal mud, sand or salt flats); H (intertidal marshes) and I (intertidal forested wetlands). Western Port contains a very large expanse of intertidal sand and mudflats and marine subtidal aquatic beds. The extensive areas of saltmarsh and mangroves within the Ramsar site (wetland types H and I) are considered to be in good condition (Boon et al. 2011).

Criterion 2: The site supports the Fairy Tern which is a species of global conservation significance, in addition to the Dense Leek-orchid which is listed as vulnerable under the EPBC Act. Saltmarsh vegetation within the site provides important habitat for the Orange-bellied Parrot, listed as critically endangered under the EPBC Act.

Criterion 3: The soft sediments of Western Port support a high diversity of Ghost Shrimps, including *Michelea microphylla*, a local endemic species known only from Crib Point. The intertidal and subtidal reefs at San Remo, which support a high diversity of one invertebrate group — Opisthobranchs (Sea-Slugs and Sea-hares) and Crawfish Rock, although small, is considered especially diverse: 600 species have been documented at this site: 130 algae, 150 sponges, 50 hydroids, 180 bryozoans and 80 ascidians. In addition, the rare hydroid *Ralpharia coccinea* found at Crawfish Rock, and may be endemic to Western Port.

Criterion 4: The description of this criterion implies a number of common functions and roles that wetlands provide including supporting fauna during migration and breeding. Over 35 waterbird species listed under international migratory agreements have been recorded within the Ramsar site. This number includes species that, in Australia, are residents (e.g. Eastern Great Egret) and vagrant seabirds for which the site does not provide significant habitat (e.g. Artic jaeger). There are 12 species of international migratory shorebirds that are regularly supported (in two thirds of seasons) by the Western Port Ramsar Site.

Criterion 5: Western Port Ramsar site supports > 20,000 waterbirds in 80 percent of years (annual maximum count). This satisfies the Convention requirements of "at least two thirds of seasons" to meet this criterion. Although there was a decline in total waterbird abundance from the mid 2000s, the site continues to meet this criterion

Criterion 6: Six species meet this criterion including Australian Fairy Tern, Australian Pied Oystercatcher, Curlew Sandpiper, Eastern Curlew, Pacific Gull, Red-necked Stint.

Criterion 8: The seagrass and other habitats within the embayment act as important nursery habitat for a range of fish and crustacean species. Western Port is a key breeding area for some species such as elephant fish, school shark and Australian anchovy, and a nursery area for other species such as King George Whiting, Yellow-eye Mullet and Australian Salmon. The site also supports a number of fish species that migrate between fresh, estuarine and marine waters as part of their life cycles, including the Australian Grayling, Black Bream and the Short-finned Eel.

Is there a real chance or possibility that the proposed action will result in:

Issue	Y	N
areas of the wetland being destroyed or substantially modified?	X	
a substantial and measurable change in the hydrological regime of the wetland?		X
the habitat or lifecycle of native species dependent upon the wetland being seriously affected?	X	
a substantial and measurable change in the physico-chemical status of the wetland?	X	
an invasive species that is harmful to the ecological character of the wetland being established or encouraging the spread of existing invasive species?	X	

Issues to note

Potential impacts

Areas of the wetland being destroyed or substantially modified

The FSRU will be moored at the Crib Point Jetty which is located within the boundary of the Western Port Ramsar site. The jetty extends approximately 660 m east into the North Arm from the boundary of the landside component. The landside component is already highly developed and is not located within the boundary of the Western Port Ramsar site, however the Ramsar site adjoins the north, south and east boundaries of this property.

There is a possibility that nearby seagrass, saltmarsh and mangrove communities will be impacted by the FSRU being moored permanently at the jetty as a result of pollution/contaminants and ship wash. There is also possibility that a number of marine species including Ghost Shrimp will be impacted from cold water pollution, chlorine contamination and entrenchment. This is discussed further below.

Therefore it is likely that areas of the Western Port Ramsar wetland may be destroyed or substantially modified as a result of the proposed action.

A substantial and measurable change in the hydrological regime of the wetland

Western Port is a large tidal inlet that extends for approximately 30 km from north to south and for approximately 40 km east to west. The features that strongly influence the hydrodynamics of Western Port are: The two large islands in the Bay – French Island and Phillip Island; the extensive areas of

shallow mudflats, particularly in the northern sector of the Bay; and the relatively large tidal range (approximately 3 m) in Bass Strait at the entrances to Western Port.

The pattern of water circulation within the bay is also a significant driving force behind the character of the Ramsar site. Water movement within the bay is complex with circulation of water in a clockwise direction. As a result of the clockwise direction of water circulation, much of the sediment delivered to the north-east section of the Ramsar site is transported into the Corinella and Rhyll basins where much of it is deposited.

Catchment freshwater inflows are essential elements of critical processes which influence the character of the Ramsar site. Western Port receives an average of 1100 ML of freshwater per day from the 17 waterways that flow into the Ramsar site which equates to less than 1 per cent of the total volume of water in Western Port at high tide. The major waterways draining the catchment are said to contribute approximately 75 per cent of the total freshwater inflows into the bay all of which drain directly into the Ramsar site.

The FSRU is a ship that will be permanently moored at the jetty and is unlikely to adversely impact the hydrology of the Ramsar site. The jetty infrastructure associated with this referral (including high pressure gas unloading arms and a high pressure gas flowline mounted to the jetty) and is not expected to have an impact on the hydrology of the landside component.

It is unlikely the proposed action will adversely affect the hydrology of the Western Port Ramsar site.

A substantial and measurable change in the physio-chemical status of the wetland

The FSRU is likely to cause a substantial and measurable change in the physio-chemical status of the Ramsar Wetland. This is discussed further below:

Cold Water Pollution

As mentioned above, regasification involves heating LNG using the ambient heat of seawater in Western Port. The cold-water discharged from the FSRU heat exchanger will be initially 7°C cooler than ambient which has the potential to adversely impact a number of marine species including fish and the Ghost Shrimp.

The plume of water starts from the discharge ports on the FSRU and descends to the seabed, diluting on the way due to shear between the descending plume and the adjacent seawater. The initial dilution during the descent increases marginally at times of stronger tidal current. During periods of relatively low tidal currents, the cold-water plume reaches the seabed and spreads over the seabed in the shipping basin.

Modelling has shown that the extent of cold-water will depend on a range of tidal and discharge conditions. A single port discharge temperature differential may extend a maximum of 600 m downstream of the discharge with a maximum width of 240 m, and the cold-water may form a pool on the seabed at low tide during periods of particularly low currents.

AGL has adopted a six-port discharge with a resulting temperature differential that reaches within 0.3°C of ambient at a maximum of 200 m downstream of the discharge point with a maximum width of 60 m either side of the discharge. According to AGL, the only location that will be constantly exposed to cool seawater will be the water column and seabed within the fall line of the descending cool plume next to the FSRU. This will be the location where effect of the discharge on the marine ecosystem is likely to be greatest. AGL is proposing to undertake additional studies to further define the effects within North Arm and to document the distributions of marine ecosystem components in the vicinity of the discharge.

Chlorine

Seawater used in the FSRU contains a range of marine biota and propagules which can attach to the pipes and grow into larger individuals that can block the heat exchanger pipes. This biological process can be prevented by the addition of a biofouling inhibitor at the intake to prevent 'biofouling'. In this case, the biofouling inhibitor is produced by electrolysis of seawater at the intake to produce chlorine and hypochlorite. The seawater discharged from the FSRU heat exchanger will contain residual chlorine which rapidly reacts in seawater to form a range of short-lived toxicants including hypochlorite and various bromine oxidants.

Residual chlorine chemicals in the seawater discharge at Crib Point is recognised as a potential risk to marine environmental values in the vicinity of Crib Point. Modelling has shown that chlorine reduction rates in seawater are dependent on a range of factors including water temperature, local seawater quality, discharge arrangements and initial chlorine concentration. Modelling has indicated that within 20 seconds from the time of discharge the initial dilution process will reduce the concentration to approximately 0.005 mg/L, slightly above the ANZECC 2000 interim working value of 0.003 mg/L. Potential impacts of the discharge are expected to be confined to an area of approximately 200 m north and south and 60 m east and west of the discharge point.
Potential impacts may include toxic effects to chlorine sensitive species; effects on physiological functions of chlorine sensitive biota; and/or effects on reproductive responses of chlorine sensitive species.

Pollution /oil spills/wastewater

According to the referral documentation, it is expected that there will be approximately 12 to 40 LNG carriers per year from the Asia Pacific region and globally. This will of course will depend on demand but will be for the life of the project which is 20 years. This increases the risks of increased waste/pollution entering the Ramsar site. The referral documentation states that the chances of oil spills are slim as all LNG carriers and FSRU's typically use natural gas to fuel engines.
There will also be a sewage treatment plant on the FSRU. Greywater will be evaporated and sludge resulting from the treatment process would be removed by barge. This runs risk of contamination of the Ramsar site if not managed appropriately.

The habitat or lifecycle of native species dependent on the wetland being seriously affected

As discussed above the proposed action is likely to adversely impact native species dependent on the ecological character of the Ramsar Wetland as a result of the cold water pollution, chlorine chemicals in the seawater and potential pollution/waste/oil spills. There is also likely to be impacts from increased levels of noise/lighting, collisions with larger marine species as a result of increased number of ships, constant wash from ships on vegetation and mudflats along the banks of the wetland, and possible entrenchment of animals during sea water intake. Some of these species include Ghost Shrimp, Australian Fairy Tern, Dolphins, Seals, Planktonic and Pelagic Marine Species.

Noise/Lighting

According to the referral documentation, the FSRU will run 24 hrs per day which may lead to potential operational noise and vibration impacts on marine fauna and water birds. However, LNG have indicated that noise and vibration from the FSRU and visiting LNG carriers will contribute to an existing background of shipping and recreational vessels already operating in Western Port.

Collisions/Entrenchment

The main unavoidable adverse effect of the heat exchanger system is to entrain smaller marine organisms (very small fish, zooplankton and phytoplankton), drifting eggs and larvae in the central part of the water column in the intake zone. It is assumed that all entrained biota will not survive as a result of mechanical damage and exposure to chlorine biocide during passage through the heat exchange system. The entrained biota comprise a wide range of planktonic plants and animals, larvae and eggs, from a wide range of plant and animal groups. To prevent larger animals entering seawater heat exchange system, Intake grilles will installed.

There is also a potential risk of increased collisions with marine fauna as a result of the number of extra ships that will enter Western Port each year. According to the referral documentation, there will be an additional 15 – 40 LNG carriers entering the Ramsar site each year. This leads to potential increased collisions with marine fauna including whales, dolphins, and seals.

Ship Wash/Erosion

It is also possible that constant mooring of the FSRU and LNG carriers may cause disturbance to the shoreline and seabed potentially impact mudflats and vegetation communities that are present (seagrass, saltmarsh, mangroves) as a result of ship wash.

According to the referral documentation, there is expected to be local erosion of the seabed near the vessels due to the presence of the vessels causing a local acceleration of the water velocity. Other factors expected to cause erosion in the vicinity of the vessels are propeller wash and propeller wash from tugs manoeuvring the LNG carrier. This erosion is a normal part of port operations, and expected to cause disturbance to the seabed within the port turning basin and within 150 m of the berth.

Therefore the proposal is likely to lead to the habitat or lifecycle of a native species dependent on the wetland being seriously affected.

An invasive species that is harmful to the ecological character of the wetland being established or encouraging existing invasive species

The FSRU will result in an increase in the number of foreign vessels entering Western Port Ramsar site which may lead to the introduction or spread of marine pests. The referral documentation states that there is likely to be anywhere from 15 – 40 vessels per year over the 20 year life of the project. Ships entering Western Port must comply with the *Commonwealth Biosecurity Act 2015* as the environmental and economic threat posed by marine pests to Western Port is recognised by the PoHDA and Parks Victoria.

The discharge of ballast waters is prohibited in port waters and LNG carriers entering Australian waters must manage ballast water according to the Australian Ballast Water Management Requirements, which align with the International Convention for the Control and Management of Ships Ballast Water and Sediments 2004.

While there are measures in place to reduce the likelihood of marine pests entering the Ramsar site there is still a possibility that this could still occur.

Conclusion

Based on the information that was provided in the referral documentation, it is likely there will be adverse impacts to the ecological character of the Western Port Ramsar site. Further assessment should be undertaken to fully understand this impact.

It is important to note that this project is related to the Pakenham Gas Pipeline proposal (EPBC 2018/8297) which was referred separately. The wetlands section has provided separate advice on each project as requested by ESD. The wetlands section considers that as two projects are related and they should be assessed at the same time to ensure the cumulative/facilitated impacts are taken into consideration.

Advice prepared by: s22

Other areas consulted: No

ESD Referral Officer: s22

Cleared by: s22 Acting Director, Wetlands Section

Signature: s22

Date: 25/10/18.

Cleared by: s22, Acting Assistant Secretary: Wetlands, Policy and Northern Basin Branch

Signature: s22

Date: 30/10/18.

Advice noted + supported. —
s22 . 30 Oct.

Sources:

ECD/ECD Addendum

RIS

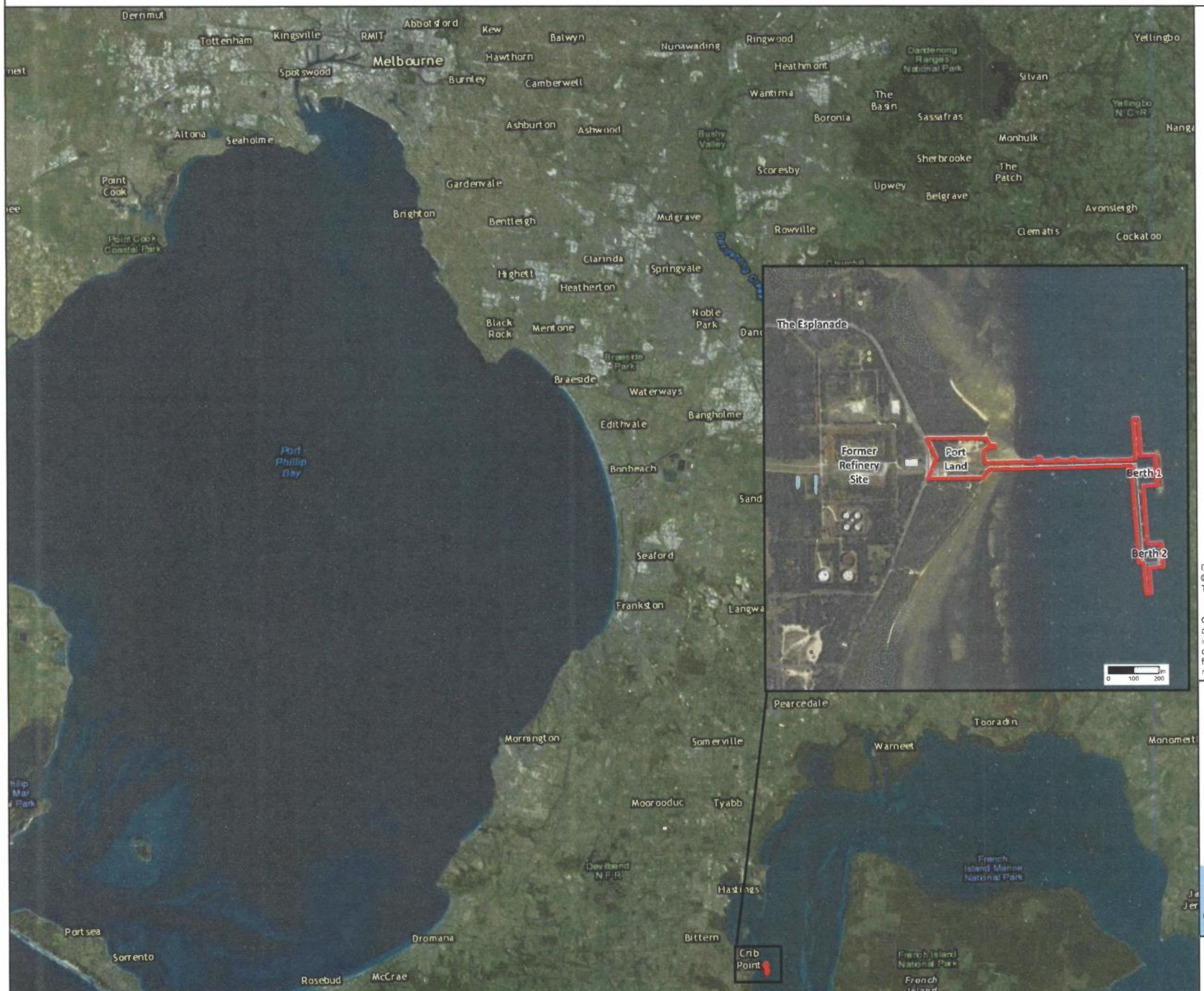
Referral Documentation

Attachments:

Attachment 1: Proposed action
Attachment 2: Western Port Ramsar site location

Figure 1: Location Overview

AGL Gas Import Jetty Project



Legend

Project Site

N

IS210700

GDA 1994 MGA Zone 55

0 5 10
Kilometres

DATA SOURCES
© Commonwealth of Australia (Geoscience Australia) 2006 Geodata Topo 250k Series 3; Vicmap Data © State of Victoria 2017.

JACOBS

Document Path: J:\IE\Projects\03_Southern\IS210700\Spatial\ArcGIS\IS210700_AGL_LNG_Import_Jetty_Project_Location_Overview.mxd

Date Published: 22 Nov 2017

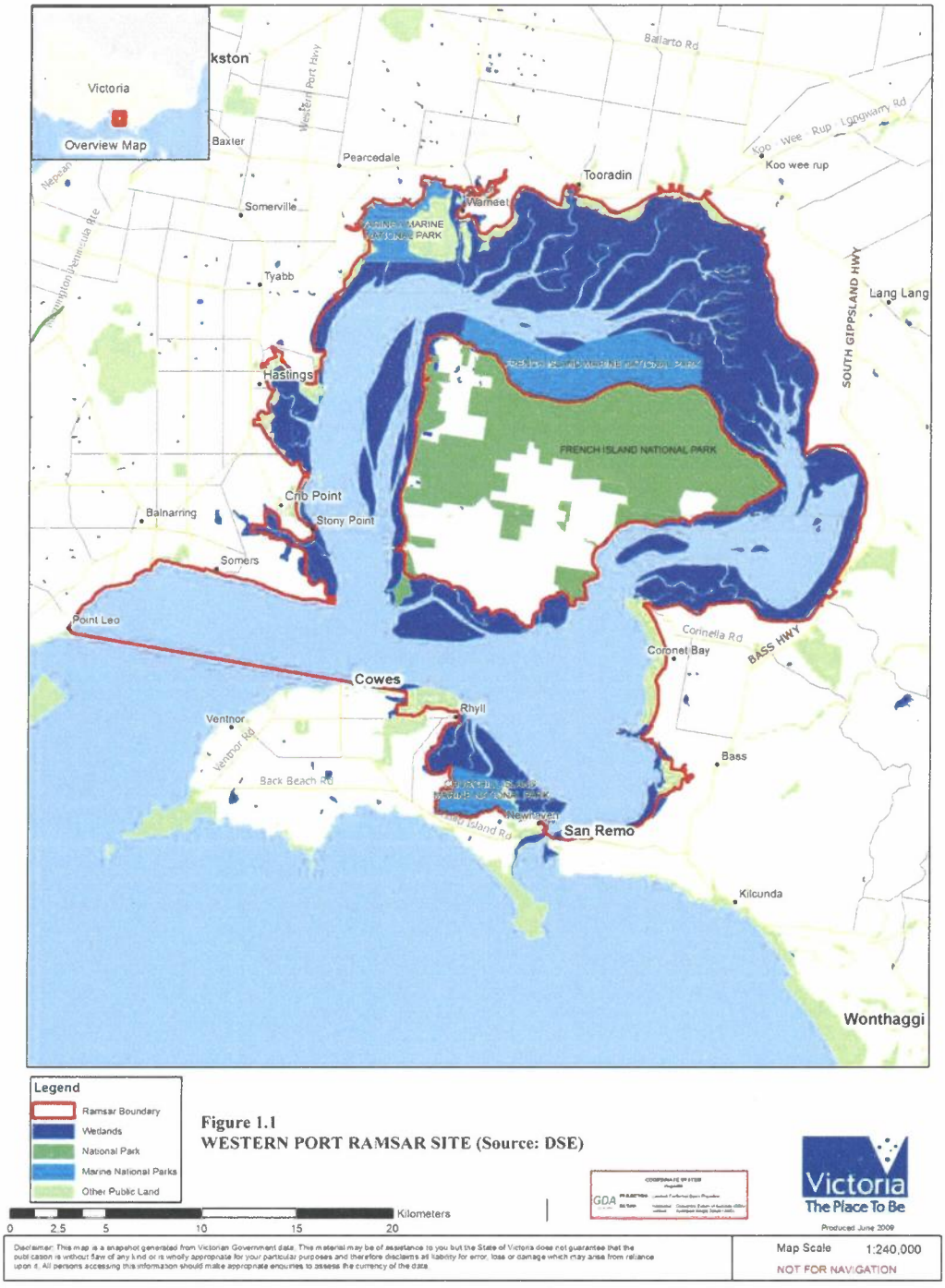


Figure 5 Western Port Ramsar Site (Source: Department of Sustainability and Environment, 2003)

Australian Government
Department of the Environment and Energy

FOI 190719
Document 1i

Notification of
REFERRAL DECISION AND DESIGNATED PROPONENT – controlled action

Gas import facility, Crib Point, Victoria (EPBC 2018/8298)

This decision is made under section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

proposed action	To develop and operate a Liquefied Natural Gas import facility utilising a Floating Storage and Regasification Unit, at Crib Point, Victoria [See EPBC Act referral 2018/8298].
decision on proposed action	The proposed action is a controlled action. The project will require assessment and approval under the EPBC Act before it can proceed.
relevant controlling provisions	• Wetlands of international importance (s16 & s17B) • Listed threatened species & communities (s18 & s18A) • Listed migratory species (s20 & s20A)
designated proponent	AGL WHOLESALE GAS LIMITED ABN: 26 072 948 504
assessment approach	The project will be assessed under the assessment bilateral agreement with Victoria.

Decision-maker

Name and position	James Barker Assistant Secretary Assessments and Governance Branch
Signature	
date of decision	28/11/2018

EPBC Ref: 2018/8298

Phaedra Deckart
GM Energy Supply & Origination
AGL WHOLESALE GAS LIMITED
699 Bourke Street
DOCKLANDS VIC 3008

Dear Ms Deckart

Decision on referral
Gas Import Facility, Crib Point, Vic

Thank you for submitting a referral under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).This is to advise you of my decision about the referral of the proposed action, to develop and operate a Liquefied Natural Gas import facility utilising a Floating Storage and Regasification Unit, at Crib Point, Victoria (EPBC 2018/8298).

As a delegate of the Minister for the Environment, I have decided under section 75 of the EPBC Act that the proposed action is a controlled action and, as such, it requires assessment and a decision about whether approval for it should be given under the EPBC Act.

The information that I have considered indicates that the proposed action is likely to have a significant impact on the following matters protected by the EPBC Act:

- Wetlands of international importance (s16 & s17B);
- Listed threatened species & communities (s18 & s18A); and
- Listed migratory species (s20 & s20A).

Based on the information available in the referral, the proposed action is considered likely to have a significant impact on the following matters of national environmental significance, but not limited to:

- Western Port Ramsar wetland
- Southern Right Whale (*Eubalaena australis*) – Endangered, migratory
- Humpback Whale (*Megaptera novaeangliae*) – Vulnerable, migratory
- Dense Leek-orchid (*Prasophyllum spicatum*) – Vulnerable
- Loggerhead Turtle (*Caretta caretta*) – Endangered, migratory
- Green Turtle (*Chelonia mydas*) – Vulnerable, migratory
- Leatherback Turtle (*Dermochelys coriacea*) - Endangered, migratory
- Australian Grayling (*Prototroctes maraena*) – Vulnerable
- Australian Fairy Tern (*Sternula nereis nereis*) – Vulnerable
- Eastern Curlew (*Numenius madagascariensis*) – Critically Endangered, migratory
- Curlew Sandpiper (*Calidris ferruginea*) – Critically Endangered, migratory
- Red Knot (*Calidris canutus*) - Endangered, migratory
- Great Knot (*Calidris tenuirostris*) – Critically Endangered, migratory
- Greater Sand Plover (*Charadrius leschenaultia*) - Vulnerable, migratory

- Lesser Sand Plover (*Charadrius mongolus*) - Endangered, migratory
- Bar-tailed Godwit (Baueri) (*Limosa lapponica bauera*) – Vulnerable, migratory
- Northern Siberian Bar-tailed Godwit (*Limosa lapponica menzbieri*) – Critically Endangered, migratory
- Sharp-tailed Sandpiper (*Calidris acuminata*) – migratory
- Red-necked Stint (*Calidris ruficollis*) – migratory
- Double-banded Plover (*Charadrius bicinctus*) – migratory
- Bar-tailed Godwit (*Limosa lapponica*) – migratory

Please note that this decision only relates to the potential for significant impacts on matters protected by the Australian Government under Chapter 2 of the EPBC Act.

The Victorian Government has advised the Department that your project will be assessed under the bilateral agreement under the Victorian *Environment Effects Act 1978*.

Each assessment approach requires different levels of information and involves different steps. All levels of assessment include a public consultation phase, in which any third parties can comment on the proposed action.

Indigenous communities may also need to be consulted during the assessment process. For more information on how and when indigenous engagement should occur during environmental assessments, please refer to the indigenous engagement guidelines at http://www.environment.gov.au/epbc/publications/engage-early.

Please note, under subsection 520(4A) of the EPBC Act and the *Environment Protection and Biodiversity Conservation Regulations 2000*, your assessment is subject to cost recovery. Please find attached a copy of the fee schedule for your proposal. Fees will be payable prior to each stage of the assessment proceeding. Please note that for an assessment under an accredited process, the Minister may determine that fees are not applicable for stages where the Commonwealth does not undertake any assessment. In this case Stage 1 will be managed by the Department of Environment, Land, Water and Planning, so you will not be charged or invoiced for this stage. Further details on cost recovery are available on the Department's website at: http://www.environment.gov.au/epbc/cost-recovery.

If you disagree with the fee schedule provided, you may apply under section 514Y of the EPBC Act for reconsideration of the method used to work out the fee. The application for reconsideration must be made within 30 business days of the date of this letter and can only be made once for a fee. Further details regarding the reconsideration process can be found on the Department's website at: http://www.environment.gov.au/protection/environment-assessments/assessment-and-approval-process/refer-proposed-action.

I have also written to the Victorian Department of Environment, Land, Water and Planning to advise them of this decision.

You may elect under section 132B of the EPBC Act to submit a management plan for approval at any time before the Minister makes an approval decision of the proposed action under section 133 of the EPBC Act. If an election is made under section 132B of the EPBC Act, cost recovery will apply to the approval of any action management plans you submit.

Cost recovery does not apply to the approval of action management plans where you do not elect to submit an action management plan for approval under section 132B of the EPBC Act

and the approval of the action management plan does not arise from a variation to the approval conditions that you have requested.

Where you vary an approval condition and it results in you being required to submit an action management plan for approval, cost recovery will apply to the approval of the action management plan. Please refer to the attached Action Management Plan fee election form for more details.

Please also note that once a proposal to take an action has been referred under the EPBC Act, it is an offence under section 74AA to take the action while the decision making process is on-going (unless that action is specifically excluded from the referral or other exemptions apply). Persons convicted of an offence under this provision of the EPBC Act may be liable for a penalty of up to 500 penalty units. The EPBC Act is available on line at: http://www.environment.gov.au/epbc/about/index.html

The Department has recently published an *Environmental Impact Assessment Client Service Charter* (the Charter) which outlines the Department's commitments when undertaking environmental impact assessments under the EPBC Act. A copy of the Charter can be found at: http://www.environment.gov.au/epbc/publications/index.html.

If you have any questions about the referral process or this decision, please contact the project manager, s22 , by email to s22 @environment.gov.au, or telephone (02) 6274 s22 and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely

James Barker
Assistant Secretary
Assessments and Governance Branch
28 November 2018

ATTACHMENTS:

- Decision notice
- Fee schedule
- Action Management Plan Fee Election Form
- Fact sheet on the EPBC Act assessment process

EPBC Ref: 2018/8298

Ms Jane Homewood
Executive Director, Statutory Planning Services
Department of Environment, Land, Water and Planning
Level 8, 8 Nicholson Street
EAST MELBOURNE VIC 3002

Dear Ms Homewood

Decision on referral
Gas Import Facility, Crib Point, Vic

This is to advise you of my decision about the referral of the proposed action, to develop and operate a gas import facility at Crib Point, Victoria (EPBC 2018/8298).

As a delegate of the Minister for the Environment, I have decided under section 75 of the EPBC Act that the proposed action is a controlled action and, as such, it requires assessment and a decision about whether approval for it should be given under the EPBC Act.

The information that I have considered indicates that the proposed action is likely to have a significant impact on the following matters protected by the EPBC Act:

- Wetlands of international importance (s16 & s17B);
- Listed threatened species & communities (s18 & s18A); and
- Listed migratory species (s20 & s20A).

Based on the information available in the referral, the proposed action is considered likely to have a significant impact on the following matters of national environmental significance, but not limited to:

- Western Port Ramsar wetland
- Southern Right Whale (*Eubalaena australis*) – Endangered, migratory
- Humpback Whale (*Megaptera novaeangliae*) – Vulnerable, migratory
- Dense Leek-orchid (*Prasophyllum spicatum*) – Vulnerable
- Loggerhead Turtle (*Caretta caretta*) – Endangered, migratory
- Green Turtle (*Chelonia mydas*) – Vulnerable, migratory
- Leatherback Turtle (*Dermochelys coriacea*) - Endangered, migratory
- Australian Grayling (*Prototroctes maraena*) – Vulnerable
- Australian Fairy Tern (*Sternula nereis nereis*) – Vulnerable
- Eastern Curlew (*Numenius madagascariensis*) – Critically Endangered, migratory
- Curlew Sandpiper (*Calidris ferruginea*) – Critically Endangered, migratory
- Red Knot (*Calidris canutus*) - Endangered, migratory
- Great Knot (*Calidris tenuirostris*) – Critically Endangered, migratory
- Greater Sand Plover (*Charadrius leschenaultia*) - Vulnerable, migratory
- Lesser Sand Plover (*Charadrius mongolus*) - Endangered, migratory
- Bar-tailed Godwit (Baueri) (*Limosa lapponica bauera*) – Vulnerable, migratory

- Northern Siberian Bar-tailed Godwit (*Limosa lapponica menzbieri*) – Critically Endangered, migratory
- Sharp-tailed Sandpiper (*Calidris acuminata*) – migratory
- Red-necked Stint (*Calidris ruficollis*) – migratory
- Double-banded Plover (*Charadrius bicinctus*) – migratory
- Bar-tailed Godwit (*Limosa lapponica*) – migratory

Please note that this decision only relates to the potential for significant impacts on matters protected by the Australian Government under Chapter 2 of the EPBC Act.

I note that your Department has advised that the project will be assessed under the bilateral agreement under the Victorian *Environment Effects Act 1978.*

I have also written to the designated proponent to advise them of this decision.

If you have any questions about the referral process or this decision, please contact the project manager, s22 , by email to s22 @environment.gov.au, or telephone (02) 6274 s22 and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely

James Barker
Assistant Secretary
Assessments and Governance Branch
28 November 2018

ATTACHMENTS:

- Decision notice

FOI 190719
Document 2

s22

From: s22 @delwp.vic.gov.au
Sent: Thursday, 8 November 2018 3:11 PM
To: s22
Cc: s22 @delwp.vic.gov.au
Subject: Fw: Gas Import Jetty Facility and Crib Point to Pakenham Gas Pipeline EES: Scoping Requirements for your review
Attachments: Crib Point Working Draft EES scoping requirements 7 November 2018.docx; EES Procedures & Requirements - Appendix A.pdf; AGL APA - TRG review register.xlsx; Gas Import Jetty Pipeline Project_Study-Program_20181108.pdf

Dear s22

Thanks for your message. Please see below the message we've sent to our TRG members to-day with the "working draft" scoping requirements and an updated proposed study program provided this morning by the proponent through its consultants. For Victorian purposes we are treating AGL and APA as a single proponent for a single project, for which a single EES is required.

The content in the scoping requirements document which remains uncertain until your controlled action decision(s) is highlighted in yellow. I have made my best guess at the species which might be nominated as relevant threatened or migratory species if those prove to be controlling provisions. It would be most helpful if you could let me know whether the list of species should be modified or deleted, relative to DoEE's thinking regarding the controlled action decision. Comments on any of the other highlighted text would also be welcome.

We have a requirement (standard under the Ministerial guidelines, and reinforced in this case as usual by the procedures and requirements the Minister issued when he decided that an EES is required) to advertise draft Scoping Requirements for public comment fifteen business days. In order to avoid criticism or distraction by running the formal comment period too close to Christmas, we wish to have the draft Scoping requirements comment period finish no later than Friday 14 December, which means it must commence no later than Thursday 22 November - only two weeks from to-day. Hence our request to the TRG for comments within a week from now. If we can't complete the public comment period before Christmas, it might be necessary to delay advertising for several weeks, perhaps as long as a couple of months, which would be undesirable in the context of the proponent's ambitious timetable for the project.

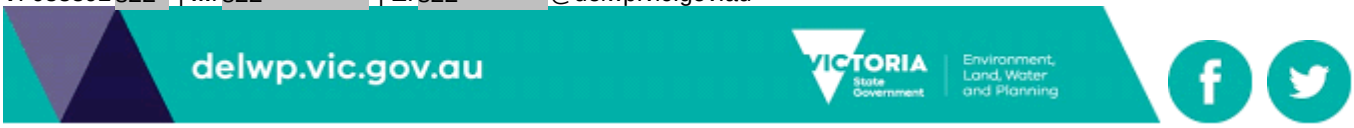
However, it's likely that we might also be criticised for advertising the draft Scoping Requirements before the EPBC Act decision(s) about whether the project is a controlled action have been made, so it would be a big help for us if the decision on the AGL & APA EPBC referrals could be made in time to be reflected in the advertised draft scoping requirements.

Any advice you can provide both about your decision(s) and about the relevant text of the working draft scoping requirements will be much appreciated. Thanks very much, s22 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



----- Forwarded by s22 /Person/VICGOV1 on 08/11/2018 02:30 PM -----

From: s22 /Person/VICGOV1
To: s22 /Person/VICGOV1@VICGOV1, s22 @casey.vic.gov.au, s22

s22 /Person/VICGOV1@VICGOV1, s22 /Person/VICGOV1@VICGOV1, s22 @ppwcma.vic.gov.au, s22 s22 /Person/VICGOV1@VICGOV1, s22 /DPC@DPC, s22 @casey.vic.gov.au, s22 s22 /Person/VICGOV1@VICGOV1, Js22 @epa.vic.gov.au, s22 @melbournewater.com.au, s22 s22 /EPA@EPA, s22 /Person/VICGOV1@VICGOV1, s22 /Person/VICGOV1@VICGOV1, s22 @portofhastings.com, s22 @parks.vic.gov.au, s22 @mornpen.vic.gov.au, s22 s22 /Field_Services/VWA@WorkCover, s47F @agl.com.au, s22 /Person/VICGOV1@VICGOV1, s22 @cardinia.vic.gov.au, s22 @energysafe.vic.gov.au
Cc: s47F @agl.com.au, s47F @aecom.com, s47F @apa.com.au, s47F @apa.com.au, 's47F s47F " <s47F @aecom.com>
Date: 08/11/2018 11:41 AM
Subject: Gas Import Jetty Facility and Crib Point to Pakenham Gas Pipeline EES: Scoping Requirements for your review

---

Dear TRG,

Thank you for those of you who sent me an email regarding the next TRG or the site visit. We will be in touch shortly with more information on this. Please find attached for your review:

- The working draft scoping requirements
- Proponent study program
-

Following hopefully this afternoon will be the:

- Draft EES consultation plan
-

Please be advised that the Commonwealth are yet to make a decision on the referrals, as a result we have put in some placeholder text however this will be reviewed once we have the decision. The study program has helped to inform the scoping requirements, if you have any key comments with this document please provide in the spreadsheet, otherwise if you could please focus your review on the working draft scoping requirements and your relevant statutory/legislative obligations outlined in Section 3, and the relevant technical aspects in Section 4. Please do not worry about providing grammatical/minor comments. If you can please put your comments into the spreadsheet register (we will use this until we have the sharepoint up and running).

Could you please provide your comments back to myself and cc in s22 **no later than next Thursday 15 November**, we would really appreciate it so we can try and get the scoping requirements out on public exhibition the following week.

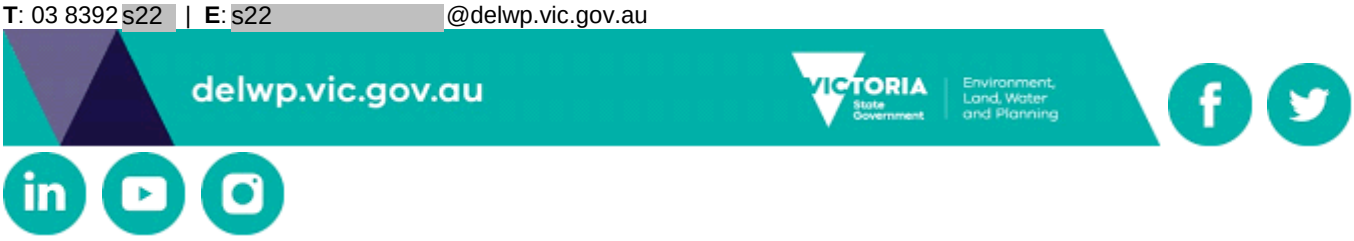
If you have any questions, please give either myself or s22 a call.

Kind regards,

s22

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

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



FOI 190719
Document 2a

Gas Import Jetty Facility and Crib Point to Pakenham Gas Pipeline -Technical Report / EES Chapter Comme

Technical Report Title:		Report Title				4	Critical Issue
Comments By						3	Immediate Issue
Organisation		Agency				2	Discussion Item
						1	Suggestion/editorial change

TRG Members

Comment ID	Reviewer Name	Report/Chapter Revision	Report Section/ location	Reviewer Comment	Comment Date	Comment Category
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						

36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65						
66						
67						
68						
69						

91							
92							
93							
94							
95							
96							
97							
98							
99							
100							

Environment Effects Act 1978

Working draft scoping requirements for the Gas Import Jetty Facility and Crib Point to Pakenham Gas Pipeline 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 <Project name> 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 <Draft EES Scoping Requirements exhibition end date>.

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 <Project name> project itself should be directed to the proponent:
<Proponent contact title> <Proponent contact surname>
<Proponent (organisation) name>
Telephone: <Proponent contact phone>
Email: <Proponent contact email>
Website: <Proponent website>

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. Ltd.
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*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
FFG Act	*Flora and Fauna Guarantee Act 1988*
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*
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. Ltd. (APA) (jointly acting as the proponent) must prepare an environment effects statement (EES) for the Crib Point gas import facility and Crib Point-Pakenham gas pipeline project (the project). 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 Crib Point gas import facility and Crib Point-Pakenham gas pipeline project set out the specific matters to be investigated and documented in the EES for the project. 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

The proponent proposes to establish a new facility for importing and degasifying liquefied natural gas (LNG) and supplying it to the distribution network. The proposal entails upgrade/modification works to the existing jetty operated by the Port of Hastings Development Authority at Crib Point, to provide for continuous mooring of a floating storage and regasification unit (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 gas would then be odorised and transferred via the new pipeline to Pakenham where its pressure would be corrected, specifications checked and modified if necessary, and connected to the existing distribution network for commercial supply to customers. The location of the jetty and the proposed pipeline alignment are shown in Figure. 1.

Aside from the FSRU, ancillary topside jetty infrastructure including high pressure gas unloading arms and a high-pressure gas flowline 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. Works for the pipeline would entail conventional pipeline installation in an excavated trench, except where horizontal directional drilling would be used to avoid surface disturbance at watercourses, major roads or other sensitive surface features. It would also include construction of a facility at Pakenham to check and correct gas specifications against commercial supply standards before delivering it into the network. The pipeline would extend for about 56 km and would occupy an easement generally about 30 m wide. Where available, it might share existing infrastructure easements.

Works for which statutory approvals already exist, including dredging works near the jetty and works being undertaken on the jetty by the Port of Hastings development Authority, 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).

Figure 1: Location of the project. <<Two figures will be inserted for the exhibited version>>

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

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.

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 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 outlined the steps in the EES process and the parallel coordination of statutory processes.

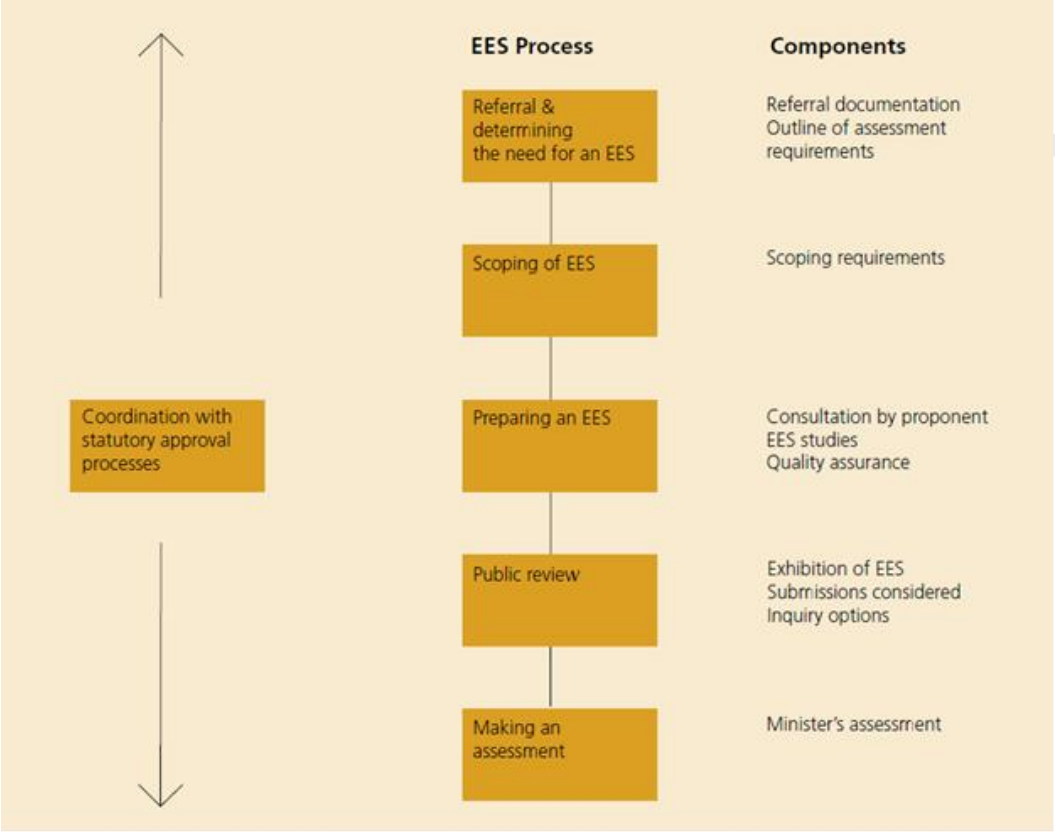


Figure 2: Coordination of statutory assessment and approvals processes

(Optional section if EES is to be accredited under the EPBC Act) <<TBC>>

2.3 Accreditation of the EES process under the EPBC Act

The proponent also referred the project 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 determined on <yet to be determined> that the project is/is not a 'controlled action', as it is likely to have a significant effect on the following matters of national environmental significance (MNES), which are protected under Part 3 of the EPBC Act [to be updated based on the EPBC Act decision on referral]:

- kghjgljhkjhhlkh (sections x and y); and
- kjhkjlhkjhk;hk;hk (sections x and y)

The EES 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 will decide whether the project is approved, approved with conditions or refused under the EPBC Act, after having considered the Minister for Planning's 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.

Conclusions regarding the [above/specified] MNES protected under the EPBC Act should be summarised in a separate chapter/section of the EES and include reference information as to where within the document the 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;
- 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;
- the likely residual effects, including on MNES, that are likely to occur after all proposed measures to avoid and mitigate environmental effects are implemented;
- 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 on the acceptability of effects 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, including potential effects on identified MNES outlined in section 4;
- 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's 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;
- 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;

3. Effects include direct, indirect, combined, consequential, short and long-term, beneficial and adverse effects. <<tell Rob fix in template>>

- 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.

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 the 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 during construction and operation;
  - proposed or foreseeable offshore activities that may be necessitated by the project, such as seawater intakes and discharges and mixing zones;
  - design and expected construction staging and scheduling;
  - 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 works.
- 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;
- an explanation of selection process for the proposed pipeline route;
- identification and evaluation of design alternatives;
- 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.
- documentation of the basis for the proposed project.

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.

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*; and
- *Native Title Act 1993.*

Victorian

- *Environment Effects Act 1978*;
- *Environment Protection Act 1970* (EP Act), Environment Protection (Industrial Waste Resource) Regulations 2009, as well as relevant State Environment Protection Policies (SEPPs) and related documents including SEPP (Groundwaters of Victoria) and SEPP (Waters of Victoria), SEPP (Prevention and Management of Contamination of Land), SEPP (Ambient Air Quality), SEPP (Air Quality Management) and Environment Protection (Industrial Waste Resource) Regulations;
- *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);
- *Climate Change Act 2017*;
- *Occupational Health and Safety Act 2004* (OH&S Act) and relevant regulations;
- *Coastal Management Act 1995*;
- *Crown Land (Reserves) Act 1978*;
- *Land Act 1958*;
- *Flora and Fauna Guarantee Act 1988* (FFG Act);
- *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 2007;
- *Traditional Owners Settlement Act 2010*; and
- *Heritage Act 2017*.

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:

- 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*;
- 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.
- Australia's obligations under the Ramsar Convention for the Western Port Ramsar site, including the implementation of the Western Port Ramsar Site Strategic Management Plan; and
- Relevant local government plans.

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.

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	Environment Effects Act, OH&S Act, PH&W Act, Marine Safety Act, Pipelines Act

term, having regard to projected demand and supply of natural gas in context of the State's overall energy needs and management.	
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	FFG Act, Wildlife Act, CF&L Act, Environment Protection Act, M&C Act, EPBC 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	EP Act & SEPPs, Water Act, C&LP Act, EPBC 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, 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	Environment Protection 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 and public safety risks associated with the construction or operation of the project.
- The rationale for the project in the context of energy security and efficiency.
- 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.
- 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 workforce and public safety during construction and operation of the project.

Assessment of likely effects

- Assess the level of residual risk relative to relevant standards associated with the FSRU and other elements of the project.

Approach to manage performance

- Describe the monitoring program to be implemented through 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 pricing and security to be measured relative to EES 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 footprint site.
- 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, the FFG Act and/or DELWP advisory lists, including but not limited to birds, in particular:
  - Australian Fairy Tern (*Sternula nereis nereis*);
  - (Far) Eastern Curlew (*Numenius madagascariensis*);
  - Curlew Sandpiper (*Calidris ferruginea*);
  - Australasian Bittern (*Botaurus poiciloptilus*);
  - Sharp-tailed Sandpiper (*Calidris acuminata*);
  - Bar-tailed Godwit (*Limosa lapponica*);
  - Black-tailed Godwit (*Limosa limosa*);
  - Terek Sandpiper (*Xenus cinereus*);
  - Grey-tailed Tattler (*Heteroscelus brevipes*) ;
  - Pacific Golden Plover (*Pluvialis fulva*);
  - Ruddy Turnstone (*Arenaria interpres*);
  - Whimbrel (*Numenius phaeops*);
  - Red-necked Stint (*Calidris ruficollis*);
  - Double-banded Plover (*Charadrius bicinctus*); and
  - Latham's Snipe (*Gallinago hardwickii*).
- 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 connectivity, or other disturbance impacts arising from construction or operation, including noise and lights.
- Potential for adverse effects on the ecological character and biodiversity values of the listed 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, weeds, pathogens and pest animals.
- Potential for significant 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.
- 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 for the loss of native vegetation and habitat for relevant listed threatened species, ecological communities and migratory species under the EPBC Act and/or 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.
- Identify the existing or likely presence of any protected species, and especially species listed under the EPBC Act, FFG Act and DELWP advisory lists, as well as declared 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 nearby wetlands, including the Western Port Ramsar site. This characterisation is to be informed by the literature and recent available data (especially 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.
- 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 systems and susceptibility to changed water temperature.
- 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 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 EPBC Act and FFG Act;
  - presence of, or suitable habitats for, native flora and fauna species, especially those listed under the EPBC Act, FFG Act, and DELWP advisory lists; and
  - use of the site and its environs for movement by EPBC Act, 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 or minimise 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.

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 EPBC Act or the FFG Act.
- Assess likely indirect effects of the project on the ecological character and habitat values of the Western Port Ramsar wetland site.
- Assess likely direct and indirect effects of the project and relevant alternatives on protected fauna and their habitat, including listed (FFG Act/EPBC Act) threatened and migratory species, relative to existing hazards and risks where relevant.

- 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 have been 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, including as part of the EMF (see Section 5).

Commonwealth offsets

- Describe and evaluate proposed measures to manage residual effects of the project on biodiversity values, including an outline of an offset strategy and offset management plan that sets out proposed environmental offsets to satisfy Commonwealth offset policy requirements.
- Describe how the offset will be secured, managed and monitored, including management actions, responsibility, timing, performance measures and the specific environmental outcomes to be achieved.
- Outline the key commitments and management actions for delivering and implementing a proposed offset through an Offset Management Plan.
- Proposed offsets must meet the requirements of the EPBC Act Environmental Offsets Policy (Oct, 2012): www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy.

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.
- The potential for adverse effects on biodiversity values of the Western Port Ramsar site.

Priorities for characterising the existing environment

- 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 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, including as 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 Western Port.

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 cultural heritage values.
- Potential for permanent loss of significant heritage values.

Priorities for characterising the existing environment

- Characterise Aboriginal cultural heritage sites or areas of sensitivity in or near the project area, particularly but not only in high sensitivity areas such as near coasts and waterways.
- 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, businesses, land uses, open space and other landscape values.

Key issues

- 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 project works to affect business (including farming) operations or other existing or approved facilities or land uses.
- Potential for temporary or permanent changes to use of or access to existing infrastructure in the project area and in its vicinity.
- 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 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 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.
- 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

- Predict likely atmospheric concentrations of dust and other relevant air pollution indicators at sensitive receptors along the road 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
- Assess potential safety hazards to the public arising from project construction.

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, as 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 wastes generated by the project.
- Identify the sensitivity of receiving waters to cooled seawater discharge, 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 or 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.

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.