South East Australia Carbon Capture and Storage Project, Commonwealth waters

Application Number: **02149** Commencement Date: **04/12/2023** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

South East Australia Carbon Capture and Storage Project, Commonwealth waters

1.1.2 Project industry type *

Exploration (mineral, oil and gas - marine)

1.1.3 Project industry sub-type

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1.1.4 Estimated start date *

01/06/2025

1.1.4 Estimated end date *

31/12/2040

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

Project Overview

Esso Australia Resources Pty Ltd proposes to compress, dehydrate, transport and store carbon dioxide (CO_2) in the depleted Bream oil and gas reservoir located in Commonwealth waters. EARPL, a wholly owned subsidiary of ExxonMobil Australia Pty Ltd, is the operator for the Gippsland Basin Joint Venture (GBJV) (EARPL and Woodside Energy (Bass Strait) Pty Ltd (Woodside Energy)). The action is proposed as part of the Gippsland Basin Joint Venture.

The CO_2 stream available for injection as part of the Project is forecast to average ~0.5 million tonnes per annum (Mtpa) with a peak CO_2 compression capacity of ~0.7 Mtpa and a cumulative injection of approximately 3 million tonnes (MT). This would be achieved by compressing the concentrated CO_2 stream, which is already separated and vented at the existing licensed Longford Gas Conditioning Plant (GCP) (which is operated by EARPL), into a dense phase for transportation to the existing Bream A (BMA) platform where it will be injected and stored in the depleted Bream oil and gas reservoir (see **Att 01 – Figures**, Figure 1 (page 1)**)**. The Bream reservoir ceased production in September 2020 following more than 30 years of production including periods of gas injection and cycling.

The operational phase of the project is expected to be approximately 7-10 years. Monitoring of the injected CO_2 will be required for a period of time after the operational phase once injection has ceased.

The Project would provide a foundation for potential future expansion, including to allow for the injection and storage of CO_2 from third party sources. As any such expansions cannot be defined at this point, they are not addressed in, and are out of scope of, this referral. If in the future an expansion proposal becomes sufficiently defined a further assessment against the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) would be undertaken.

The Project will predominantly involve the use of existing facilities with the proposed use and required modifications described below.

Proposed Actions

There are three main components covered by this referral and all components occur within the Commonwealth jurisdiction. These components have been described below and pictorially represented in **Att 01 – Figures,** Figure 2 (page 2). The components of the Project within the State jurisdiction are the subject of a separate referral (2023/09731) and are defined in Section 1.2.5. EARPL will build, own (together with Woodside Energy (Bass Strait) Pty Ltd in their capacities as Gippsland Basin Joint Venture (GBJV) participants), operate and maintain the new (and existing) infrastructure required for the Project.

The proposed action includes:

- Utilisation of the existing Bream pipeline (within Commonwealth waters).
- Topside modification and operations of the existing Bream A platform
- Utilisation of the depleted Bream reservoir as a greenhouse gas storage formation

The Project footprint covers an area of 3474.6 hectares (ha). As the Project will utilise existing infrastructure the disturbance footprint has been reduced to 0.22 ha (for modification activities in the existing Bream A platform). Activities associated with the actions described above (such as noise and light emissions and planned discharges) may have an impact on the Commonwealth marine area, 39 threatened species (28 of these species are also listed as migratory) and a further 13 migratory species.

A full description of the main components has been added as an attachment as there is a word limit restriction. Please refer to **Att 06 - Proposed Action Details.** References mentioned in **Att 06 – Proposed Action Details** have been linked here.

Out of Scope

For completeness, it is noted that a separate wellwork campaign will be completed on up to five existing wells using a platform-based workover rig (the Wellwork). The Wellwork is anticipated to take up to 6 months.

While these five existing wells will be utilised for greenhouse gas injection and monitoring activities, the Wellwork and any operations which may follow to obtain baseline downhole pressure and temperature data (Data Operations) or other activities to explore and/or appraise the proposed storage site such as geotechnical and geophysical surveys or environmental surveys (Survey Operations) are excluded from the scope of this referral, as such operations will be managed pursuant to the 'Final Approval Decision for the Taking of Actions in Accordance with an Endorsed Program under the Environment Protection and Biodiversity Conservation Act 1999 (Cth)' issued by the Minister for the Environment on 27 February 2014 (Class Approval). This Class Approval applies to the undertaking of greenhouse gas activities in Commonwealth waters taken in accordance with the 'Program Report – Strategic Assessment of the environmental management authorisation process for petroleum and greenhouse gas storage activities administered by the National Petroleum and Greenhouse Gas Storage Act 2006'. The Wellwork, Data Operations and Survey Operations will be covered by the Class Approval as they will be undertaken in accordance with the Endorsed Program and in accordance with accepted Environment Plans under the Offshore Petroleum Greenhouse Gas Storage (Environment) Regulations 2009 (Cth).

Given the BMA platform is an existing platform and all wellheads associated with the wells to be used in connection with the greenhouse gas injection and monitoring activities are located on the BMA platform with existing conductors connecting them to the seabed, the only construction activities associated with utilising the depleted Bream reservoir as a greenhouse gas storage formation will be the topside modifications described above, and the Wellwork which is out of scope of this referral.

Ongoing operations, optimisations and inspection, maintenance and repair activities on the BMA platform (including preparation and removal of redundant equipment, and permanent abandonment of redundant wells associated with the BMA platform's petroleum operations) and the Bream pipeline that are authorised under the existing petroleum production licence and pipeline licence under the Commonwealth OPGGS Act, as well as the Bass Strait Environment Plan (EP 4975) accepted under the OPGGS (Environment) Regulations are out of scope of this referral.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

Yes

1.2.3 Is the proposed action the first stage of a staged development (or a larger project)?

No

1.2.4 Related referral(s)

EPBC Number	Project Title
2000/20	Gas Pipeline

1.2.5 Provide information about the staged development (or relevant larger project).

This project action is not part of a staged development, but it is related to other actions or proposals in the region.

Following consultation with the Department of Climate Change, Energy, the Environment and Water (DCCEEW), referral of the Project was split into two: i) components onshore in Victoria and in Victorian State waters (referral ID: 2023/09731); and ii) components in Commonwealth waters (this referral).

The main components of the Project within the State jurisdiction (out of scope of this referral), consist of:

- Modifications at the existing Environment Protection Authority (EPA) licensed Gas Conditioning Plant (GCP)
- New CO2 facilities for compression and dehydration adjacent to Longford
- New CO2 onshore pipeline
- Utilisation of the existing Bream pipeline (onshore and within State waters)

The split of the referral of the Project across two separate referrals is appropriate because:

- the decision to do so follows consultation with DCCEEW;
- there are clear geographical boundaries where the Project referrals can split (i.e., a distinction between activities proposed in Commonwealth waters and activities proposed on land and waters within Victoria's jurisdiction);
- splitting the referrals in this way provides an opportunity for the environmental assessment of the action within Victoria's jurisdiction to be managed pursuant to the Bilateral Agreement between the Victorian and the Commonwealth governments; and
- this referral clearly indicates that it is related to the separate referral relating to components onshore in Victoria and in Victorian State waters;
- the referral relating to components onshore in Victoria and in Victorian State waters will clearly indicate that it is relates to this referral;
- between the two referrals, all significant impacts of the Project are, or will be assessed;
- both referrals have considered the holistic impact of the entire project.

A referral under the *Environment Effects Act 1978* (Vic) has also been prepared (in parallel) in relation to the portions of the Project that would occur onshore and within State waters. The scope of each referral is described below:

Referral under Environment Effects Act

- Modifications at the existing EPA licensed GCP
- New CO2 facilities for compression and dehydration adjacent to Longford GCP
- New CO2 onshore pipeline
- Utilisation of the existing Bream pipeline (onshore and within State waters)

Referral under EPBC Act – Victorian jurisdiction (referral ID: 2023/09731)

- Modifications at the existing EPA licensed GCP
- New CO2 facilities for compression and dehydration adjacent to Longford GCP
- New CO2 onshore pipeline
- Utilisation of the existing Bream pipeline (onshore and within State waters)

Referral under EPBC Act – Commonwealth jurisdiction (this document)

- Utilisation of the existing Bream pipeline (within Commonwealth waters)
- Topside modification and operations of the existing Bream A platform
- Utilisation of the depleted Bream reservoir as a greenhouse gas storage formation

While the Project is not the first stage of a staged development or stage of a larger project, the Project would provide a foundation for potential future expansion, including to allow for the injection and storage of CO2 from third party sources and to facilitate development of a CCS hub in the Gippsland Basin. As the nature of any potential future expansions cannot be defined at this point, they are not addressed in, or within the scope of, this referral. If in the future an expansion proposal becomes sufficiently defined a further assessment against the EPBC Act would be undertaken.

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)

The EPBC Act aims to protect nationally important flora, fauna, ecological communities, and heritage places, defined as matters of national environmental significance (MNES). Under the EPBC Act, actions that are likely to have a significant impact on MNES will trigger Commonwealth assessment and approval. The Act also protects all cetaceans (whales, dolphins, and porpoises) in Commonwealth waters and provides protections for Australian Marine Parks (AMPs).

In parallel to this referral EARPL is submitting a referral under the EPBC Act for the portion of the Project that would occur wholly in the State jurisdiction (onshore and State waters).

Native Title Act 1993 (Cth) (NT Act)

The NT Act recognises the rights and interests of Aboriginal peoples and Torres Strait Islanders to traditional lands and waters. It establishes procedures to be followed so that future acts (proposed actions/developments) can be validly done.

The Victorian *Traditional Owner Settlement Act 2010* provides an alternate system to the NT Act for recognising the rights of Victorian traditional owners and provides a system for negotiating or consulting about activities on Crown land that is subject to a settlement.

The Gunaikurnai people have been determined by the Federal Court of Australia to hold non-exclusive native title rights and interests in respect of certain Crown land areas over much of Gippsland. EARPL recognises the Gunaikurnai people as important stakeholders in the region and has an existing relationship with GLaWAC as a result of long-term operations in Gippsland. EARPL has commenced project specific engagement with GLaWAC.

Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cth) (Commonwealth OPGGS Act)

The Commonwealth OPGGS Act and its regulations addresses licensing, health, safety, and environmental matters for offshore greenhouse gas (GHG) activities within Commonwealth waters (between 3-200 NM from shore). The OPGGS (Environment) Regulations ensure that greenhouse gas activities are carried out in a manner; consistent with the principles of ecologically sustainable development set out in section 3A of the EPBC Act; and by which the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable and will be of an acceptable level.

In accordance with the OPGGS Act and Regulations, the Project will require:

- Greenhouse Gas Assessment Permit
- Declaration of Identified Greenhouse Gas Storage Formation
- Injection Licence
- Site Plan (including a CO2 monitoring plan)
- Pipeline Licence Variation to existing licence VIC/PL32
- Safety Case
- Environment Plan (EP)
- Well Operation Management Plan (WOMP)

Environment Protection (Sea Dumping) Act 1981 (Cth) (Sea Dumping Act)

The Sea Dumping Act regulates the loading and dumping of controlled material at sea in Australian waters. Under the Sea Dumping Act, a permit is required for the placement of controlled material (as defined in the Sea Dumping Act) in Australian waters, including the injection of CO2 streams into sub-seabed geological formation. A sea dumping permit will be required for the Project to load and store CO2 in the sub-seabed geological formation.

Australian Maritime Safety Authority Act 1990 (Cth)

The main objectives of the *Australian Maritime Safety Authority Act 1990* (AMSA Act) are the promotion of maritime safety and the protection of the marine environment. The AMSA Act also sets out the processes and procedures for combating marine pollution, particularly oil spills. Project vessels will be required to comply with this Act to minimise and respond to potential spill events that may occur during modification and operational activities.

Biosecurity Act 2015 (Cth)

The *Biosecurity Act 2015* manages biosecurity risks in Australia, in particular diseases and pests that may cause harm to human, animal or plant health or the environment. This Act sets out requirements on goods, aircraft, and vessels from overseas that enter Australian territory and implements the Ballast Water Convention, regulating ballast water of certain vessels. Project vessels will be required to comply with the Act by implementing control measures that reduce the likelihood of the introduction of invasive marine pests (IMS).

Fisheries Administration Act 1991 (Cth)

The *Fisheries Administration Act 1991* (FA Act) is largely responsible for the management of Australian fisheries in Commonwealth waters. The FA Act sets out the legislative basis for statutory fishing rights, licences, permits and fisheries management plans. Of particular relevance to the Project is the Commonwealth commercial fisheries that use the offshore Project Area.

Navigation Act 2012 (Cth)

The *Navigation Act 2012* is legislation which covers international ship and seafarer safety, actions of seafarers in Commonwealth waters and protects the marine environment where it relates to shipping. This Act also gives effect to international conventions for maritime issues where Australia is a signatory. Project vessels will be required to adhere to the requirements of this Act.

Protection of the Sea (Prevention of Pollution from Ships) Act 1938 (Cth)

The *Protection of the Sea (Prevention of Pollution from Ships) Act 1938* along with the *Navigation Act 2012* implements into domestic law Australia's obligation under the International Convention for the Prevention of Pollution from Ships (MARPOL). The obligations include the prevention of accidental and operational marine environment pollution from shipping and relate to pollution by oil, noxious liquid substances, harmful packaged substances, sewage, garbage, and air emissions. Project vessels will be required to adhere to the requirements of this Act.

Underwater Cultural Heritage Act 2018 (Cth)

The *Underwater Cultural Heritage Act 2018* protects shipwrecks, sunken aircraft, and their associated artefacts, older than 75 years old, regardless of whether their location is known. This Act requires a permit to enter and utilise the area within a shipwreck protection zone and sets out obligations if unknown cultural heritage sites are encountered. The *Underwater Cultural Heritage Act 2018* (Cth*)* protects

Aboriginal and Torres Strait Islander underwater cultural heritage if discovered in Commonwealth waters.

Victorian legislation

No State legislation is relevant to the portion of the Project that occurs within Commonwealth waters however the Project will comply with all relevant state legislation for the broader Project, including (but not limited to) the following:

- Aboriginal Heritage Act 2006
- Country Fire Authority Act 1958
- Environment Effects Act 1978
- Environment Protection Act 2017
- Flora and Fauna Guarantee Act 1988
- Occupational Health and Safety Act 2004
- Offshore Petroleum and Greenhouse Gas Storage Act 2010
- Pipelines Act 2005
- Planning and Environment Act 1987
- Road Management Act 2004
- Water Act 1989
- Wildlife Act 1975

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

For a description of consultation and records of consultation related to the Project see **Att 05 - Description of consultation** and **Att 02 - Summary of consultation** respectively. Links for the following which have been referenced in **Att 05 - Description of consultation** have also been provided.

- SEA CCS Stakeholder Consultation Plan (EARPL, 2023)
- SEA CCS Project Webpage (EARPL, 2022)
- SEA CCS Pipeline Consultation Plan (EARPL, 2022)

1.3.1 Identity: Referring party

Privacy Notice:

Personal information means information or an opinion about an identified individual, or an individual who is reasonably identifiable.

By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

The Department of Climate Change, Energy, the Environment and Water (the department) collects your personal information (as defined by the Privacy Act 1988) through this platform for the purposes of enabling the department to consider your submission and contact you in relation to your submission. If you fail to provide some or all of the personal information requested on this platform (name and email address), the department will be unable to contact you to seek further information (if required) and subsequently may impact the consideration given to your submission.

Personal information may be disclosed to other Australian government agencies, persons or organisations where necessary for the above purposes, provided the disclosure is consistent with relevant laws, in particular the Privacy Act 1988 (Privacy Act). Your personal information will be used and stored in accordance with the Australian Privacy Principles.

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☑ **Confirm that you have read and understand this Privacy Notice ***

1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	62091829819
Organisation name	ESSO AUSTRALIA RESOURCES PTY LTD
Organisation address	Level 9, 664 Collins St, Docklands, VIC 3008

Referring party details

Name	Lucy Levecke
Job title	Environment & Regulatory Advisor
Phone	+61 3 9261 0000
Email	lucy.j.levecke@exxonmobil.com
Address	Level 9, 664 Collins St, Docklands, VIC 3008

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	62091829819
Organisation name	ESSO AUSTRALIA RESOURCES PTY LTD
Organisation address	Level 9, 664 Collins St, Docklands, VIC 3008

Person proposing to take the action details

Name	Emma Ogilvie
Job title	SEA CCS Project Manager
Phone	+61 3 9261 0000
Email	emma.m.ogilvie@exxonmobil.com

Address	Level 9, 664 Collins St, Docklands, VIC 3008

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

Yes

Joint Venture Name	Business Address	ABN/ACN	Responsible Person	Email
Woodside Energy (Bass Strait) Pty Ltd	Mia Yellagonga, 11 Mount Street, Perth WA 6000	004228004	Emma Read	EMMA.READ@woodside.com

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

Esso Australia Resources Pty Ltd (EARPL) has a satisfactory record of responsible environment management. EARPL has operated in Australia for over 50 years and has a demonstrated record of minimal impact on the environment. EARPL has clearly defined policies and practices, along with rigorously applied management systems, committing them to environmental responsibility.

For completeness, it is noted that EARPL receives services, including personnel, from its affiliate, Esso Australia Pty Ltd (EAPL).

EAPL has also operated in Australia for over 50 years and during that time has, among other things, acted as a service provider to EARPL. EARPL and EAPL are both wholly owned subsidiaries of ExxonMobil Australia Pty Ltd. EARPL is the operator of the assets in Bass Strait that are part of the Gippsland Basin Joint Venture between EARPL and Woodside Energy (Bass Strait) Pty Ltd (Woodside Energy).

Noting the length of time EARPL has operated, the length of time EAPL has provided services to EARPL, and the inherent risks associated with onshore and offshore oil and gas operations, EARPL and EAPL have over time been issued with a range of regulatory notices or similar documents. These include clean up and pollution abatement notices issued by the Environment Protection Authority Victoria and general directions and notices issued by the National Offshore Petroleum Safety and Environmental Authority.

EARPL/EAPL has established practices for managing regulatory notices. Generally, EARPL/EAPL will have been engaged with the relevant regulator in advance of a regulatory notice being issued in order to understand the regulator's concerns and how those concerns might be addressed. Where a regulatory notice is issued:

- it is stewarded by reference to specific action plans developed to comply with the requirements of the notice;
- progress is regularly reviewed with senior management to ensure adequate resourcing is available to close out the notice; and
- there is ongoing engagement with the relevant regulator to ensure that the actions being undertaken by EAPL in response to the notice are aligned with the regulator's expectations and result in progress towards the closing out of the notice.

Where notices extend over long periods of time, EARPL/EAPL formally engages with the relevant regulator at regular intervals to discuss progress.

Esso Australia Pty Ltd, acting as a service provider to Esso Australia Resources Pty Ltd, was convicted on 12 June 1992 of a pollution offence under the Victorian *Environment Protection Act 1970* following a spill of 10,000 litres of crude oil to land at its Victorian Long Island Point facility. Esso Australia Pty Ltd was fined $5,000 plus $1,450 costs. Extensive remediation works were undertaken by Esso Australia Pty Ltd to restore the land affected.

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

It is EARPL's policy to conduct its business in a manner that is compatible with the balanced environmental and economic needs of the communities in which it operates. EARPL is committed to continuous efforts to improve environmental performance throughout its operations.

Accordingly, EARPL's policy is to:

- Comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist;
- Encourage concern and respect for the environment, emphasise every employee's responsibility in environmental performance and foster appropriate operating practices and training;
- Work with government and industry groups to foster timely development of effective environmental laws and regulations based on sound science and considering risks, costs, and benefits, including effects on energy and product supply;
- Manage its business with the goal of preventing incidents and of controlling emissions and wastes to below harmful levels; design, operate and maintain facilities to this end;
- Respond quickly and effectively to incidents resulting from its operations, in cooperation with industry organizations and authorised government agencies;
- Conduct and support research to improve understanding of the impact of its business on the environment, to improve methods of environmental protection and to enhance its capability to make operations and products compatible with the environment;
- Communicate with the public on environmental matters and share its experience with others to facilitate improvements in industry performance; and
- Undertake appropriate reviews and evaluations of its operations to measure progress and to foster compliance with this policy.

A copy of the environmental policy which has been adopted by EARPL is provided in **Att 03 – EARPL Environmental Policy.**

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details

ABN/ACN	62091829819
Organisation name	ESSO AUSTRALIA RESOURCES PTY LTD
Organisation address	Level 9, 664 Collins St, Docklands, VIC 3008

Proposed designated proponent details

Name	Emma Ogilvie
Job title	SEA CCS Project Manager
Phone	+61 3 9261 0000
Email	emma.m.ogilvie@exxonmobil.com
Address	Level 9, 664 Collins St, Docklands, VIC 3008

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	62091829819
Organisation name	ESSO AUSTRALIA RESOURCES PTY LTD

Organisation address	Level 9, 664 Collins St, Docklands, VIC 3008
Representative's name	Lucy Levecke
Representative's job title	Environment & Regulatory Advisor
Phone	+61 3 9261 0000
Email	lucy.j.levecke@exxonmobil.com
Address	Level 9, 664 Collins St, Docklands, VIC 3008

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	62091829819
Organisation name	ESSO AUSTRALIA RESOURCES PTY LTD
Organisation address	Level 9, 664 Collins St, Docklands, VIC 3008
Representative's name	Emma Ogilvie
Representative's job title	SEA CCS Project Manager
Phone	+61 3 9261 0000
Email	emma.m.ogilvie@exxonmobil.com
Address	Level 9, 664 Collins St, Docklands, VIC 3008

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

No

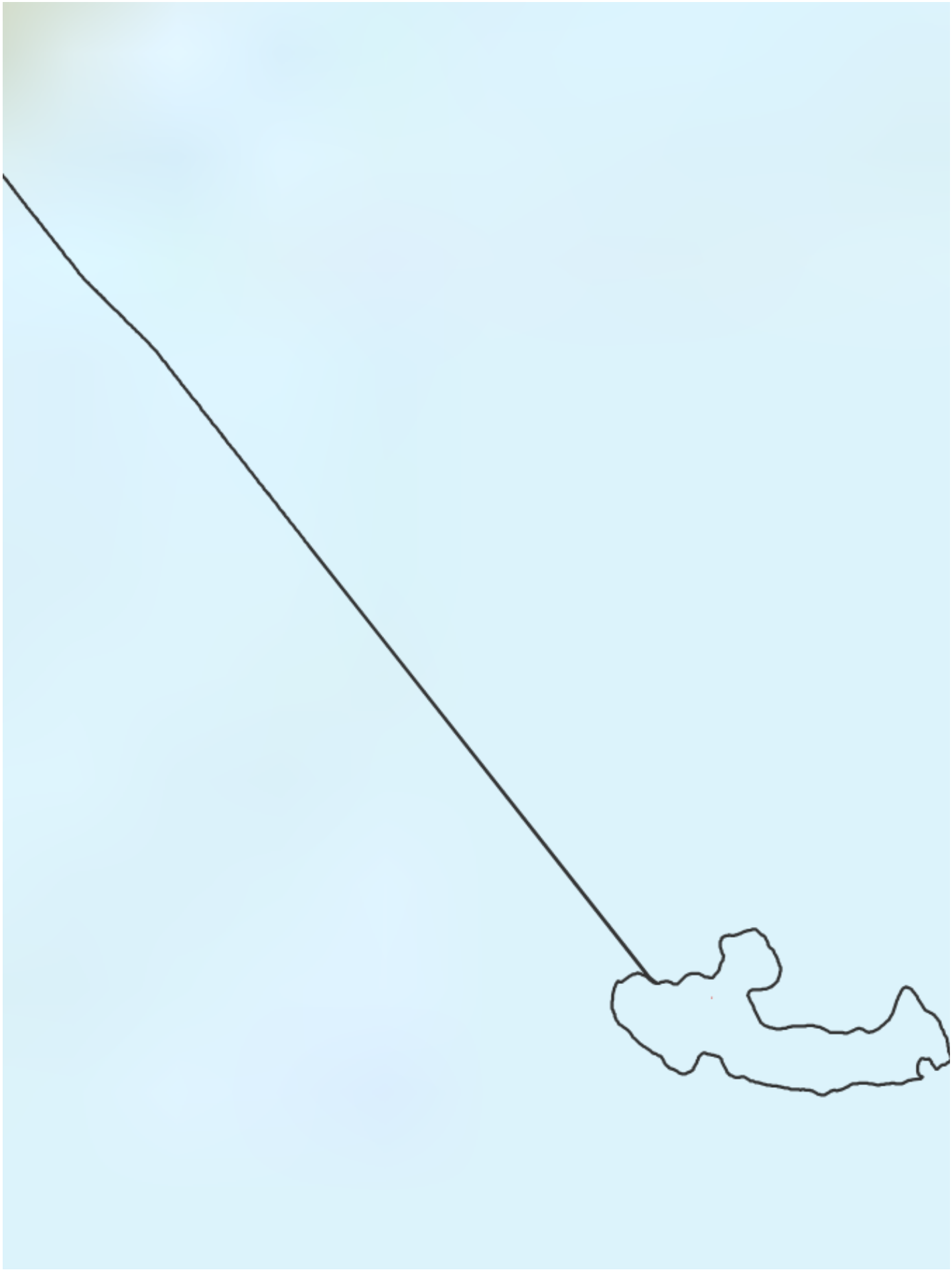
1.4 Payment details: Payment allocation

1.4.11 Who would you like to allocate as the entity responsible for payment? *

Person proposing to take the action

2. Location

2.1 Project footprint



2.2 Footprint details

2.2.1 What is the address of the proposed action? *

Commonwealth waters off Victoria

2.2.2 Where is the primary jurisdiction of the proposed action? *

Commonwealth Marine

2.2.3 Is there a secondary jurisdiction for this proposed action? *

Yes

2.2.4 Where is the secondary jurisdiction of the proposed action? *

Victoria

2.2.5 What is the tenure of the action area relevant to the project area? *

Tenure details relevant to the Commonwealth jurisdiction includes:

- 40.52 km of linear pipeline length within Commonwealth waters which is covered by a pipeline licence issued under the Commonwealth OPGGS Act. EARPL will seek a variation of that pipeline licence as part of the Project.
- The BMA platform lies within an existing petroleum production licence under the Commonwealth OPGGS Act. As part of the project, the GBJV participants (EARPL and Woodside Energy) will seek a greenhouse gas assessment permit and, subsequently if a declaration of an identified greenhouse gas storage formation is made, a greenhouse gas injection licence over the area in which the platform is located.
- The existing Bream reservoir is covered by two petroleum production licences issued under the Commonwealth OPGGS Act. As part of the project, the GBJV participants (EARPL and Woodside Energy) will seek a greenhouse gas assessment permit over all of the areas covered by those petroleum production licences and subsequently, if a declaration of an identified greenhouse gas storage formation is made, a greenhouse gas injection licence over all or part of the areas covered by those petroleum production licences.
- If a declaration of an identified greenhouse gas storage formation is made in respect of the proposed Bream greenhouse gas storage formation, a greenhouse gas injection licence will be sought for the proposed Bream greenhouse gas storage formation under the Commonwealth OPGGS Act.

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

The Project area is located on the continental shelf of the Gippsland Basin in eastern Bass Strait, starting at the maritime boundary separating Victorian State waters and Commonwealth waters 3 NM (~5.6 km) offshore from Paradise Beach and extending to approximately 46 km offshore. The continental shelf is characterised by shallow water and tidal currents. The seabed consists primarily of mobile sand flats in shallow waters, replaced by muddy fine shell, and clean shell rubble substrates (largely skeletal debris from molluscs, bryozoans, and foraminifera) at depths of 30-60 m. Across the Gippsland Basin occasional low-profile reefs, concretionary limestone and relict beach rock are also scattered across the seabed.

Results from surveys of the seabed, 1.2 km to 15 km from the shoreline in a portion of the Project area, identified the following benthic habitats and communities (CarbonNet, 2018):

- Isolated and sparse seagrass beds.
- Isolated occurrences of sponge gardens and soft corals.
- A small patch of low-profile reef around the 30 m contour, which was dominated by sponges and ascidians.
- A high diversity of invertebrate groups.
- Low numbers of scallops (including commercial species) at a density of less than 10 scallops/100 m.

- Low numbers of southern rock lobsters at likely habitat sites and mapped reefs.
- Around 43 species of fish (the most abundant was the barber perch (*Caesiaperca razor*)).
- A high diversity and abundance of zooplankton, dominated by copepods, cladocerans, salps and the dinoflagellate *Noctiluca scintillans*.

There are no Key Ecological Features (KEF) within or near the Project area (closest KEF is >45 km northeast), however, 16 biologically important areas (BIAs) associated with 11 species are located within Commonwealth waters and intersect the existing Bream pipeline and platform. These BIAs relate to white sharks, pygmy blue whales, southern right whales, and various seabirds.

Nearshore environments of significance or sensitivity within the surrounding marine area include:

- Ninety Mile Beach Marine National Park (approximately 30 km west of the Project area)
- Corner Inlet and Nooramunga Marine and Coastal Parks/ Corner Inlet Ramsar site (approximately 70 km southwest of the Project area)
- Wilsons Promontory Marine National Park (approximately 130 km southwest of the Project area)
- Beware Reef Sanctuary (approximately 130 km northeast of the Project area)
- Point Hicks Marine National Park (approximately 150 km northeast of the Project area)
- Beagle Commonwealth Marine Reserve (approximately 100 km south of the Project area)
- East Gippsland Commonwealth Marine Reserve (approximately 200 km northeast of the Project area)
- Australian Whale Sanctuary (all Commonwealth waters).

3.1.2 Describe any existing or proposed uses for the project area.

The Project area is located within the Bass Strait Area to be avoided (ATBA) designated in accordance with the Commonwealth OPGGS Act. Ships in excess of 200 gross tonnage must avoid the ATBA due to the high concentration of offshore facilities.

EARPL operates 23 platforms, five subsea facilities and more than 600 km of subsea pipelines in Bass Strait.

Despite the ATBA designation, there are a number of marine users of the Project area including commercial fisheries and recreational activities.

The following Commonwealth fisheries generally operate in Commonwealth area and overlap the Project area:

- The main commercial Commonwealth fishery in the vicinity of the Project area is the Southern and Eastern Scalefish and Shark Fishery which includes the Commonwealth Trawl Sector and the Gillnet, Hook, and Trap Sectors
- Bass Strait Central Zone Scallop Fishery
- Eastern Tuna and Billfish Fishery
- Small Pelagic Fishery
- Southern Squid Jig Fishery
- The Southern Bluefin Tuna Fishery (this fishery covers the entire sea around Australia)
- The Skipjack Tuna Fishery (currently not active and management arrangement is under review).

Recreational activities offshore of Gippsland include fishing, diving, and boating. These activities tend to concentrate near lakes and estuaries using smaller vessels. The Ninety Mile Beach National Marine Park, located approximately 50 km southwest from the existing BMA platform, is used for swimming, surfing, boating, snorkelling, and diving.

EARPL plans to repurpose existing infrastructure to support the Project. EARPL has an existing pipeline licence which it will seek to vary as part of the Project. Although the BMA platform is an existing platform, it is currently covered by a petroleum production licence and EARPL will seek greenhouse gas titles to cover Project activities.

The following petroleum and greenhouse gas titles overlap the existing Bream pipeline:

- GBJV (EARPL and Woodside Energy) petroleum production licences: VIC/L1, VIC/L13, VIC/L14
- GBJV (EARPL and Woodside Energy) retention lease: VIC/RL1
- 3D Oil Limited petroleum exploration permit: VIC/P74
- CarbonNet greenhouse gas assessment permit: GX-6-AP

In December 2022 the Minister for Climate Change and Energy declared the offshore Gippsland area as suitable for offshore renewable energy infrastructure. This declaration does not grant exclusive rights to use the area and feasibility licences are yet to be granted to offshore wind proponents.

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

The Project area does not intersect the following:

- Marine parks, reserves or sanctuaries
- KEFs
- Critical habitats
- Habitats critical to the survival of marine turtles.

There are 16 BIAs that intersect the Project area that are associated with 11 species. The BIAs include:

- Southern Right Whale – known core range and migration and resting on migration
- Pygmy Blue Whale – foraging and distribution
- White Shark – breeding (nursery area), known distribution, distribution, and distribution (low density)
- Wandering Albatross – foraging
- Common Diving-petrel – foraging
- Bullers Albatross – foraging
- Shy Albatross – foraging
- Indian Yellow-nosed Albatross – foraging
- Black-browed Albatross – foraging
- Campbell Albatross – foraging
- Short-tailed Shearwater – foraging

There are no shipwrecks of heritage value within the Project area. The closest shipwreck with a defined protection zone is approximately 40 km southwest from the Project area.

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The Project area is situated in the middle of the continental shelf, located in the Gippsland Basin in eastern Bass Strait. Bass Strait is generally shallow with an average depth of -60 metres above sea level (mASL). The Bream pipeline traverses offshore, through State waters and enters into Commonwealth waters at approximately -30 mASL and slopes consistently downwards towards the BMA platform which is located in a water depth of -59 mASL.

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

Based on the results of the Marine Assessment Report **(Att 04 – Marine Assessment Report**, Sections 5.4.1 and 5.4.2 (page 33-52)**)** the following threatened and migratory species listed under the EPBC Act are likely to occur, or have potential to occur within the Project area:

- 39 Listed threatened species
  - Four (4) marine mammals (whales)
  - Three (3) fish
  - Three (3) marine reptiles
  - Three (3) sharks
  - 26 birds (sea and shorebirds)
- 42 Listed migratory species
  - Nine (9) marine mammals (whales or dolphins)
  - Three (3) marine reptiles
  - Five (5) sharks
  - 25 birds (24 sea and shorebirds and 1 terrestrial species)

Threatened Fauna

Thirty-nine (39) marine fauna species, listed under the EPBC Act, are likely to occur within the Project area: two species listed as critically endangered (both shore birds that may traverse through the Project area during migrations), 11 species listed as endangered, 23 listed as vulnerable and two (2) species listed as conservation dependent.

The Project area supports potential foraging habitat for a range of threatened marine species including two whales, 10 seabirds and one shorebird. Breeding of vulnerable white sharks is also known to occur within the Project area and the Project area intersects a breeding BIA relating to white sharks. However, white sharks are a highly mobile species, and the Project area is only a small component of the habitat available in the waters of south-eastern Victoria.

In total the Project area intersects with 16 BIAs that relate to 11 species: pygmy blue whale (foraging and distribution), southern right whale (known core range, foraging and migration and resting), white sharks (breeding and distribution) and various seabirds (all foraging).

Migratory species

Of the 42 species listed as migratory, 28 species are also listed as threatened. Fourteen (14) migratory species are not listed as threatened and include various mammal (whales and dolphins), shark and bird species. Most of these species are considered pelagic species, are highly mobile and would not solely rely on the Project area for movement or foraging.

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

Within the Gippsland Basin the seabed consists primarily of mobile sand flats in shallow waters, replaced by muddy fine shell, and clean shell rubble substrates (largely skeletal debris from molluscs, bryozoans, and foraminifera) at depths of 30-60 m. Occasional low-profile reefs, concretionary limestone and relict beach rock are also scattered across the seabed.

Results from surveys of the seabed, 1.2 km to 15 km from the shoreline in a portion of the offshore Project Area, identified the following benthic habitats and communities (CarbonNet, 2018):

- Isolated and sparse seagrass beds
- Isolated occurrences of sponge gardens and soft corals
- A small patch of low-profile reef around the 30 m contour, which was dominated by sponges and ascidians
- A high diversity of invertebrate groups
- Low numbers of scallops (including commercial species) at a density of less than 10 scallops/100 m
- Low numbers of southern rock lobsters at likely habitat sites and mapped reefs
- Around 43 species of fish (the most abundant was the barber perch (*Caesiaperca razor*))
- A high diversity and abundance of zooplankton, dominated by copepods, cladocerans, salps and the dinoflagellate *Noctiluca scintillans*.

Grab samples taken in soft sediment at 10 m and 40 m depths off Ninety Mile Beach, 30 km southwest of the offshore Project Area, yielded up to 430 individuals and 72 different species, with crustaceans being the dominant taxa (Coleman et al., 2007). The reefs in this area had sparse communities of small red algae and were dominated (up to 70% coverage) by sponges, ascidians, small bryozoans and hydroids (ECC, 2000).

See **Att 04 - Marine Assessment Report** (Section 5.2, page 24-25) for further information relating to benthic environments.

3.3 Heritage

3.3.1 Describe any Commonwealth heritage places overseas or other places recognised as having heritage values that apply to the project area.

There are no World Heritage Properties, National Heritage Places or Commonwealth Heritage Places within the Project area.

A desktop review of the Australian Underwater Cultural Heritage database (AUCHD) identified the following:

- No registered shipwrecks in the Project area.

Note: Nearby shipwrecks that are associated with defined protections zones include SS Glenelg (ID 6231) (protection radius of 500 m) and Clonmel (ID 6072) (protection radius of 50 m) which are 42 km and 90 km southwest, respectively, of the Project area. The AUCHD also identified 2 shipwrecks (Struan (ID 6629) and Colleen Bawn (ID 6077)) located approximately 5 km and 6.4 km, respectively, southwest of the Project area that are not associated with defined protection zones.

- No registered aircraft in the Project area.

Note: The closest aircraft wreck is the Frankston – Fairey Firefly (ID 6206) located over 100 km away, westwards, near Western Port Bay.

- No Other Underwater Cultural Heritage Sites in the Project area.

Note: All Other Underwater Cultural Heritage Sites registered in Victoria are located in Port Phillip Bay (approximately 200 km west of the Project area).

3.3.2 Describe any Indigenous heritage values that apply to the project area.

The Gunaikurnai people are the Traditional Owners of much of the Gippsland Region, including 200 m of sea country offshore. This referral relates to Commonwealth waters that begin at the edge of the State waters, 3 NM (approximately 5.6 km) from the shoreline. As such, the area appointed to the Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC), the Registered Aboriginal Party to represent the

Gunaikurnai people, does not reach into Commonwealth waters.

No indigenous values have been identified within the Project area in Commonwealth waters. The *Underwater Cultural Heritage Act 2018* (Cth) protects Aboriginal and Torres Strait Islander underwater cultural heritage if discovered in Commonwealth waters.

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

The oceanography off south-eastern Victoria is complex, with influences from the Eastern Australian and Zeehan Currents, seasonal and transient upwellings, and the Bass Strait Water Cascade. The shallowness of the waters of Bass Strait means that waters warm more rapidly in summer and cool in winter than other waters of the Region while the shelf break, which includes the edges of the continental shelf and the upper slope, serves to intensify currents, eddies and upwellings (DoE, 2015).

The natural flow system in the Gippsland Basin have been historically altered by mine dewatering, as well as groundwater and petroleum production. Taking this into account the impacts from CO2 injection on the regional flow and displacement of formation water in the Gippsland Basin have been modelled (Michael et al., 2013). On the basis of this modelling work, negative impacts on regional groundwater are not anticipated. While it is possible that the Project may cause a very small reversal of the effects of petroleum production and mine dewatering, given the position offshore and the relatively small volumes of CO2 proposed to be injected and stored, any impact on other users would very likely be imperceptible.

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	Yes	Yes
S21	Nuclear	No	Yes
S23	Commonwealth Marine Area	Yes	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes

EPBC Act section	Controlling provision	Impacted	Reviewed
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no world heritage sites within the Project area or within proximity to the Project that could be subject to direct or indirect impacts.

The nearest World Heritage property is the Royal Exhibition Building and Carlton Gardens, located in Melbourne approximately 200 km west of the Project area.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no National Heritage listed places within the Project area or within proximity to the Project that could be subject to direct or indirect impacts.

The nearest National Heritage property is the Australian Alps National Parks and Reserves (over 200 km north of the BMA platform). The Traralgon Post Office is a Commonwealth Heritage listed place and is located approximately 110 km west of the offshore BMA platform.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Ramsar wetlands exist within the Project area and Project activities within Commonwealth waters will not have a direct or indirect impact on Ramsar wetlands. One (1) Ramsar wetland is located within the onshore Project area – the Gippsland Lakes Ramsar site. The Gippsland Lakes Ramsar site consists of a group of coastal lagoons and marsh environments that are separated from the sea by a barrier system of sand dunes and fringed on the seaward side by the Ninety Mile Beach (DSEWPaC, 2010). The Project will utilise the existing Bream pipeline between Valve Site 3 and the offshore BMA platform. The Bream pipeline is buried onshore and is buried beneath the Gippsland Lakes Ramsar site (located approximately 1.6 km east from Valve Site 3). Given the existing Bream pipeline will be utilised between Valve Site 3 and the existing offshore BMA platform, there will be no construction activities associated this portion of the project and as such no direct or indirect impact to the Ramsar site is anticipated.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species
Yes	No	Balaenoptera borealis
Yes	No	Balaenoptera musculus
Yes	No	Balaenoptera physalus
Yes	No	Calidris canutus
Yes	No	Calidris ferruginea
Yes	No	Carcharodon carcharias
Yes	No	Caretta caretta
Yes	No	Chelonia mydas
Yes	No	Dermochelys coriacea
Yes	No	Diomedea antipodensis
Yes	No	Diomedea antipodensis gibsoni
Yes	No	Diomedea epomophora

Direct impact	Indirect impact	Species
Yes	No	Diomedea exulans
Yes	No	Diomedea sanfordi
Yes	No	Eubalaena australis
Yes	No	Fregetta grallaria grallaria
Yes	No	Galeorhinus galeus
Yes	No	Halobaena caerulea
Yes	No	Macronectes giganteus
Yes	No	Macronectes halli
Yes	No	Numenius madagascariensis
Yes	No	Pachyptila turtur subantarctica
Yes	No	Phoebetria fusca
Yes	No	Prototroctes maraena
Yes	No	Pterodroma leucoptera leucoptera
Yes	No	Rhincodon typus
Yes	No	Seriolella brama
Yes	No	Sternula nereis nereis
Yes	No	Thalassarche bulleri
Yes	No	Thalassarche bulleri platei
Yes	No	Thalassarche carteri
Yes	No	Thalassarche cauta
Yes	No	Thalassarche chrysostoma
Yes	No	Thalassarche eremita
Yes	No	Thalassarche impavida
Yes	No	Thalassarche melanophris
Yes	No	Thalassarche salvini
Yes	No	Thalassarche steadi
Yes	No	Thunnus maccoyii

Ecological communities

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4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

See **Att 04 - Marine Assessment Report**, Section 6 (page 61-77) for a full assessment of impacts to threatened marine fauna, including mitigation measures.

A PMST search identified 42 threatened species that could be impacted by the Project:

- Four (4) marine mammals (whales)
  - Southern right whale *Eubalaena australis* (Endangered)
  - Blue whale *Balaenoptera musculus* (Endangered)
  - Fin whale *Balaenoptera physalus* (Vulnerable)
  - Sei whale *Balaenoptera borealis* (Vulnerable)
- Three (3) fish
  - Australian grayling *Prototroctes maraena* (Vulnerable)
  - Southern bluefin tuna *Thunnus maccoyii* (Conservation Dependent)
  - Blue warehou *Seriolella brama* (Conservation Dependent)
- Three (3) marine reptiles
  - Loggerhead turtle *Caretta caretta* (Endangered)
  - Leatherback turtle *Dermochelys coriacea* (Endangered)
  - Green turtle *Chelonia mydas* (Vulnerable)
- Three (3) sharks
  - White shark *Carcharodon carcharias* (Vulnerable)
  - Whale shark *Rhincodon typus* (Vulnerable)
  - School shark *Galeorhinus galeus* (Conservation Dependent)
- 29 birds (sea and shore birds)
  - Shy albatross *Thalassarche cauta* (Endangered)
  - Grey-headed albatross *Thalassarche chrysostoma* (Endangered)
  - Southern giant petrel *Macronectes giganteus* (Endangered)
  - Northern royal albatross *Diomedea sanfordi* (Endangered)
  - Chatham albatross *Thalassarche eremita* (Endangered)
  - Gould's petrel *Pterodroma leucoptera leucoptera* (Endangered)
  - Wandering albatross *Diomedea exulans* (Vulnerable)
  - Buller's albatross *Thalassarche bulleri* (Vulnerable)
  - Campbell albatross *Thalassarche impavida* (Vulnerable)
  - Black-browed albatross *Thalassarche melanophris* (Vulnerable)
  - Southern royal albatross *Diomedea epomophora* (Vulnerable)
  - Northern giant petrel *Macronectes halli* (Vulnerable)
  - Sooty albatross *Phoebetria fusca* (Vulnerable)
  - Salvin's albatross *Thalassarche salvini* (Vulnerable)
  - White-capped albatross *Thalassarche steadi* (Vulnerable)
  - Antipodean albatross *Diomedea antipodensis* (Vulnerable)
  - Northern Buller's albatross *Thalassarche bulleri platei* (Vulnerable)
  - Blue petrel *Halobaena caerulea* (Vulnerable)
  - Gibson's albatross *Diomedea antipodensis gibsoni* (Vulnerable)
  - White-bellied storm-petrel *Fregetta grallaria grallaria* (Vulnerable)
  - Indian Yellow-nosed albatross *Thalassarche carteri* (Vulnerable)
  - Fairy prion (southern) *Pachyptila turtur subantarctica* (Vulnerable)
  - Eastern curlew *Numenius madagascariensis* (Critically Endangered)
  - Curlew sandpiper *Calidris ferruginea* (Critically Endangered)
  - Red knot *Calidris canutus* (Endangered)
  - Australian painted snipe *Rostratula australis* (Endangered)
  - Greater sand plover *Charadrius leschenaultia* (Vulnerable)
  - Nunivak bar-tailed godwit *Limosa lapponica baueri* (Vulnerable)
  - Australian fairy tern *Sternula nereis nereis* (Vulnerable)

The PMST search did not identify any threatened ecological communities that could be impacted by the Project.

Direct impacts to all threatened marine mammal, marine reptile, shark and bird species listed above include:

- Atmospheric, light and noise emission from sources such as vessels, helicopters, and generators.

Direct impacts to all threatened fish species listed above include:

- Planned discharges of utility waste, operational fluids, and fine solids (such as small amounts of cement, grit, debris, salts, and other residue/materials that may arise from maintenance activities).

Other potential impacts to threatened species include:

- Planned discharges of CO2 during commissioning/start-up, non-routine and safety venting during maintenance and Well Integrity Management System activities.
- Unplanned activities for offshore facilities such as accidental release of marine diesel from vessel collision, unplanned releases of chemicals or hydraulic fluids, introduction of invasive marine species, unplanned interaction with marine fauna.
- Unplanned discharge of CO2 from loss of containment of the pipeline or an abandoned well.

Most impacts to threatened fauna species will come from emissions generated during the short-term modification phase and the potential transition period during the early phase of injection, where the BMA platform will be staffed for maintenance purposes. Impacts will significantly reduce during the operational phase when removal of most of the hydrocarbon inventory coupled with the future normally not

staffed status means there will be considerable simplification of the BMA platform.

The activities above may lead to physiological or behavioural impacts or mortality to threatened species if not mitigated.

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.4.6 Describe why you do not consider this to be a Significant Impact. *

See **Att 04 – Marine Assessment Report**, Table 7-2 and Table 7-4 (pages 78-85 and pages 87-93) for comprehensive significant impact criteria (SIC) assessments of threatened species.

A SIC assessment was carried out on relevant EPBC Act listed species likely to be impacted by the Project. The assessment took into account the value and quality of the surrounding environment, the controls to avoid or minimise the potential impacts on threatened species, conservation management plans and Threatened Species Scientific Committee (TSSC) approved conservation advice and the intensity, duration, and magnitude of proposed activities. No species is likely to incur a significant impact, as defined by Significant Impact Guidelines 1.1 (CoA, 2013) (SIC Guidelines).

A summary of the assessment on EPBC Act listed species for the Project is as follows:

- The Project will use the existing footprint of the BMA platform and pipeline and will not modify, destroy, remove, isolate, or decrease the availability of habitat.
- By utilising the existing footprint, it is unlikely the Project will fragment an existing species' population into two or more populations.
- The intensity, duration and magnitude of the proposed activities will be temporary and short lived and unlikely to lead to a long-term decrease in the size of a population. The modification phase is short in duration (in the order of 6 months) and the operations phase will consist of intermittent maintenance programs (which will occur infrequently for short durations, at approximately 1-3 year intervals).
- Given the high mobility and dispersal capabilities of marine species, any impacts are expected to be short, infrequent, and temporary and unlikely to reduce the occupancy of a species.
- The Project area is a relatively small area in the waters off south-eastern Victoria and the availability of habitat for breeding, feeding, migration or resting is large; lifecycle habits are unlikely to be disrupted at population levels.
- Any impact on water quality from planned and unplanned discharge of fluids and solids are expected to be infrequent, localised, and temporary. Rapid dilution is expected to occur in the offshore waters which are subject to large scale oceanic currents, waves and high dilution forces and impacts are unlikely to lead to a long-term decrease in the size of a population.
- Due to the dense characteristics of CO_2, an unplanned subsea release would likely lead to CO_2 enriched water sinking in the water column impacting organisms that have limited horizontal mobility that are unable to move away from the source (i.e., sessile benthic organisms). Highly mobile species (such as the sharks, turtles, whales, and seabirds which note ocean acidification as a recognised threat) will be able to leave the area and are unlikely to suffer significant impacts from exposure. Any avoidance behaviour would be temporary and unlikely to affect breeding or long-term feeding behaviour.
- Subsea CO_2 plumes are strongly influenced by tidal mixing and residual currents. Bass Strait is a high energy environment and unplanned CO_2 releases are expected to dissipate relatively rapidly so that only a localised area (spatially, with minimal impact vertically) around a leak event is likely to be strongly impacted (measured in metres or kilometres, depending on the leak rate). Field experiments and numerical modelling indicate the carbonate system at release sites quickly returns to background values after the end of the CO_2 release period and impacts are likely to be temporary and highly localised.
- Noise emissions could disrupt feeding and searching behaviours of pygmy blue whales, limiting an individual's energy reserves and survival. However, the noise from the Project area will be minimal, localised, temporary and generally consistent with, or less than, current noise emissions in the Project area. Any avoidance of the source of this noise will not prevent individuals from continuing to forage, in terms of both searching for food and actual feeding. Individuals will not be displaced from the Foraging Area BIA and the noise will not impact their ability to meet their resource requirements for reproduction and survival.
- Support vessels have been servicing the BMA platform and Bass Strait for over 30 years. The Project will continue to use the existing fleet or equivalent vessels that comply with legislative and standard control measures and the likelihood of an invasive marine species (IMS) becoming established and affecting habitat is low. Support vessel traffic is anticipated to reduce during operations as the BMA platform will be normally not staffed.
- Impacts are considered minor, highly localised, temporary and/or intermittent and are unlikely to interfere with the recovery of any species.
- The Project will comply with all relevant regulations and standards, including relevant conservation management plans.

EARPL has constructed and operated infrastructure within Bass Strait for more than 50 years and has a firm understanding of sensitivities and potential impacts associated with offshore activities in the area. This experience leads to a robust dataset for understanding potential environmental impacts. Conclusions on the potential for significant effects to threatened species made above therefore carry a high degree of certainty.

4.1.4.7 Do you think your proposed action is a controlled action? *

No

4.1.4.9 Please elaborate why you do not think your proposed action is a controlled action. *

A controlled action is an action that is likely to have a significant impact on a protected matter (matter of national environmental significance) designated under the EPBC Act. No ecological communities listed as threatened under the EPBC Act that could be impacted by the project were identified. An assessment against the Significant Impact Criteria (SIC) in accordance with the Significant Impact Guidelines 1.1 (CoA, 2013) (SIC Guidelines) was undertaken for the 42 species listed as threatened under the EPBC Act listed in Section 4.1.4.2. The SIC assessments determined that no threatened species is likely to incur a significant impact as defined by the SIC Guidelines (see **Att 04 - Marine Assessment Report**, Table 7-2 and Table 7-4 (pages 78-85 and pages 87-93) for details). As no threatened species is likely to incur a significant impact, the proposed action is not considered a controlled action.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

A detailed impact assessment with mitigation measures is included in **Att 04 – Marine Assessment Report**, Section 6 (page 61-77)**.**

Potential direct and indirect impacts to threatened species will be managed through the implementation of a number of avoid and mitigate measures which are outlined below.

Avoid

- Utilising the existing Bream pipeline to transport CO2 from the edge of State waters (3 NM, or ~5.6 km, from the shoreline) to the BMA platform, avoiding the disturbance of approximately 41 km (linear) of potential seabed habitat within Commonwealth waters and avoiding impacts associated with construction of a new pipeline
- Use of existing offshore platform and infrastructure, avoiding impacts to marine fauna and the disturbance of potential seabed habitat associated with construction of a new platform and drilling new wells
- Utilising existing infrastructure avoids unnecessary offshore construction over numerous years (i.e., drilling rig and construction vessel emissions and discharges, increased GHG emissions, noise emissions, increased turbidity etc.).

Mitigate

- The Project will continue to use the existing fleet (or equivalent) of vessels and helicopters that comply with legislative and standard controls
- Platform and support vessel lighting limited to that required for safe navigation and work requirements
- Marine fauna management measures will be included in an Environment Plan (EP), which will be approved by NOPSEMA before modification activities commence. The new EP will contain similar impacts that are authorised under the existing approved petroleum operations-related EP (accepted 2021) (such as noise and light emissions from an existing platform and from standard vessel/helicopter activities, planned discharges of utility waste from vessels, etc.) and demonstrate EARPL's experience and understanding of marine risks and controls in Bass Strait.
- An approved Well Operations Management Plan (WOMP) and Safety Case will be in place before modification works begin
- Multiple well barriers in place
- An approved CO2 monitoring and management plan suitable for a 3 MT injection scenario will be in place to ensure early detection and adaptive management of anomalous CO2 behaviour to minimise the environmental impacts of any unplanned release and any response activities. The plan will cover the injection phase and post injection.
- By modifying existing infrastructure, the Project will mitigate emissions from lengthy (multi-year) marine construction vessel supported campaigns through the ability to execute works via primarily platform-based construction campaigns of significantly shorter duration.
- Compliance with relevant legislation, including EPBC Regulations 2000 Part 8 Division 8.1. and International (International Convention for the Prevention of Pollution from Ships (MARPOL) Annex IV, V) and Australian (Marine Order 96, 95) requirements.
- Continued compliance with existing processes, such as procedures for spill containment and response, support vessel approach procedure and ongoing platform and equipment maintenance to ensure there are no substantial changes to air or water quality
- Commitment to industry standard offshore activity measures including discharges, fauna interactions, IMS and emergency response readiness.

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

No offsets are required.

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species
Yes	No	Actitis hypoleucos
Yes	No	Apus pacificus
Yes	No	Ardenna carneipes
Yes	No	Ardenna grisea
Yes	No	Balaenoptera borealis
Yes	No	Balaenoptera edeni
Yes	No	Balaenoptera musculus
Yes	No	Balaenoptera physalus
Yes	No	Calidris acuminata
Yes	No	Calidris canutus
Yes	No	Calidris ferruginea
Yes	No	Calidris melanotos
Yes	No	Caperea marginata
Yes	No	Carcharhinus longimanus
Yes	No	Carcharodon carcharias
Yes	No	Caretta caretta
Yes	No	Chelonia mydas
Yes	No	Dermochelys coriacea
Yes	No	Diomedea antipodensis
Yes	No	Diomedea epomophora
Yes	No	Diomedea exulans
Yes	No	Diomedea sanfordi
Yes	No	Eubalaena australis
Yes	No	Isurus oxyrinchus
Yes	No	Lagenorhynchus obscurus

Direct impact	Indirect impact	Species
Yes	No	Lamna nasus
Yes	No	Macronectes giganteus
Yes	No	Macronectes halli
Yes	No	Megaptera novaeangliae
Yes	No	Numenius madagascariensis
Yes	No	Orcinus orca
Yes	No	Phoebetria fusca
Yes	No	Rhincodon typus
Yes	No	Thalassarche bulleri
Yes	No	Thalassarche carteri
Yes	No	Thalassarche cauta
Yes	No	Thalassarche chrysostoma
Yes	No	Thalassarche eremita
Yes	No	Thalassarche impavida
Yes	No	Thalassarche melanophris
Yes	No	Thalassarche salvini
Yes	No	Thalassarche steadi

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.5.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

See **Att 04 – Marine Assessment Report**, Section 6 (page 61-77) for a full assessment of impacts to migratory species, including mitigation measures.

A PMST search identified 43 migratory species that could be impacted by the Project:

- Nine (9) marine mammals (whales or dolphins)
  - Southern right whale *Eubalaena australis*
  - Blue whale *Balaenoptera musculus*
  - Fin whale *Balaenoptera physalus*
  - Sei whale *Balaenoptera borealis*
  - Killer whale *Orcinus orca*
  - Bryde's whale *Balaenoptera edeni*
  - Dusky dolphin *Lagenorhynchus obscurus*
  - Pygmy right whale *Caperea marginata*
  - Humpback whale *Megaptera novaeangliae*
- Three (3) marine reptiles
  - Loggerhead turtle *Caretta caretta*
  - Leatherback turtle *Dermochelys coriacea*
  - Green turtle *Chelonia mydas*
- Five (5) sharks
  - White shark *Carcharodon carcharias*
  - Whale shark *Rhincodon typus*
  - Porbeagle shark *Lamna nasus*
  - Shortfin mako *Isurus oxyrinchus*
  - Oceanic whitetip shark *Carcharhinus longimanus*
- 26 birds (25 sea and shore birds and 1 terrestrial species)
  - Shy albatross *Thalassarche cauta*

- Grey-headed albatross *Thalassarche chrysostoma*
- Southern giant petrel *Macronectes giganteus*
- Northern royal albatross *Diomedea sanfordi*
- Chatham albatross *Thalassarche eremita*
- Wandering albatross *Diomedea exulans*
- Buller's albatross *Thalassarche bulleri*
- Campbell albatross *Thalassarche impavida*
- Black-browed albatross *Thalassarche melanophris*
- Southern royal albatross *Diomedea epomophora*
- Northern giant petrel *Macronectes halli*
- Sooty albatross *Phoebetria fusca*
- Salvin's albatross *Thalassarche salvini*
- White-capped albatross *Thalassarche steadi*
- Antipodean albatross *Diomedea antipodensis*
- Indian Yellow-nosed albatross *Thalassarche carteri*
- Sooty shearwater *Ardenna grisea*
- Flesh-footed shearwater *Ardenna carneipes*
- Eastern Curlew *Numenius Madagascariensis*
- Curlew sandpiper *Calidris ferruginea*
- Red knot *Calidris canutus*
- Greater sand plover *Charadrius leschenaultia*
- Common sandpiper *Actitis hypoleucos*
- Sharp-tailed sandpiper *Calidris acuminata*
- Pectoral sandpiper *Calidris melanotos*
- Fork-tailed swift *Apus pacificus*

There is no important habitat for all listed migratory species above that would be substantially modified, destroyed, or isolated as a result of the Project.

Direct impacts to all migratory marine mammal, marine reptile, shark and bird species listed above include:

- Atmospheric, light and noise emission from sources such as vessels, helicopters, and generators

Other potential impacts to migratory species include:

- Planned discharges of utility waste, operational fluids, and fine solids (such as small amounts of cement, grit, debris, salts, and other residue/materials that may arise from maintenance activities).
- Planned discharges of CO2 during commissioning/start-up, non-routine and safety venting during maintenance and Well Integrity Management System activities.
- Unplanned activities for offshore facilities such as accidental release of marine diesel from vessel collision, unplanned releases of chemicals or hydraulic fluids, introduction of invasive marine species, unplanned interaction with marine fauna.
- Unplanned discharge of CO2 from loss of containment of the pipeline or an abandoned well.

Most impacts to migratory species will come from emissions generated during the modification phase of the Project and impacts will significantly reduce during the operational phase as the platform transitions to a normally not staffed status.

The activities above may lead to physiological or behavioural impacts or injury/death to migratory species if not mitigated.

4.1.5.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.5.6 Describe why you do not consider this to be a Significant Impact. *

See **Att 04 – Marine Assessment Report**, Table 7-6 (page 94-96) for comprehensive SIC assessments of migratory species.

A SIC assessment was carried out on relevant EPBC Act listed species likely to be impacted by the Project. The assessment took into account the value and quality of the surrounding environment, the controls to avoid or minimise the potential impacts on migratory species, conservation management plans and Threatened Species Scientific Committee (TSSC) approved conservation advice and the intensity, duration, and magnitude of proposed activities. No species is likely to incur a significant impact, as defined by Significant Impact Guidelines 1.1 (CoA, 2013).

A summary of the assessment on EPBC Act listed species for the Project is as follows:

- The Project will use the existing footprint of the BMA platform and pipeline and will not modify, destroy, remove, isolate, or decrease the availability of habitat.
- By utilising the existing footprint, it is unlikely the Project will fragment an existing species' population into two or more populations.
- The intensity, duration and magnitude of the proposed activities will be temporary and short lived and unlikely to lead to a long-term decrease in the size of a population. The modification phase is short in duration (in the order of 6 months) and the operations phase

will consist of intermittent maintenance programs (which will occur infrequently for short durations, at approximately 1-3 year intervals).

- Given the high mobility and dispersal capabilities of marine species, any impacts are expected to be short, infrequent, and temporary and unlikely to reduce the occupancy of a species.
- The Project area is a relatively small area in the waters off south-eastern Victoria and the availability of habitat for breeding, feeding, migration or resting is large; lifecycle habits are unlikely to be disrupted at population levels.
- Any impact on water quality from planned and unplanned discharge of fluids and solids are expected to be infrequent, localised, and temporary. Rapid dilution is expected to occur in the offshore waters which are subject to large scale oceanic currents, waves and high dilution forces and impacts are unlikely to lead to a long-term decrease in the size of a population.
- Due to the dense characteristics of CO2, an unplanned subsea release would likely lead to CO2 enriched water sinking in the water column impacting organisms that have limited horizontal mobility that are unable to move away from the source (i.e., sessile benthic organisms). Highly mobile species (such as the sharks, turtles, whales, and seabirds which note ocean acidification as a recognised threat) will be able to leave the area and are unlikely to suffer significant impacts from exposure. Any avoidance behaviour would be temporary and unlikely to affect breeding or long-term feeding behaviour.
- Subsea CO2 plumes are strongly influenced by tidal mixing and residual currents. Bass Strait is a high energy environment and unplanned CO2 releases are expected to dissipate relatively rapidly so that only a localised area (spatially, with minimal impact vertically) around a leak event is likely to be strongly impacted (measured in metres or kilometres, depending on the leak rate). Field experiments and numerical modelling indicate the carbonate system at release sites quickly returns to background values after the end of the CO2 release period and impacts are likely to be temporary and highly localised.
- Noise emissions could disrupt feeding and searching behaviours of pygmy blue whales, limiting an individual's energy reserves and survival. However, the noise from the Project area will be minimal, localised, temporary and generally consistent with, or less than, current noise emissions in the Project area. Any avoidance of the source of this noise will not prevent individuals from continuing to forage, in terms of both searching for food and actual feeding. Individuals will not be displaced from the Foraging Area BIA and the noise will not impact their ability to meet their resource requirements for reproduction and survival.
- Support vessels have been servicing the BMA platform and Bass Strait for over 30 years. The Project will continue to use the existing fleet or equivalent vessels that comply with legislative and standard control measures and the likelihood of an invasive marine species (IMS) becoming established and affecting habitat is low. Support vessel traffic is anticipated to reduce during operations as the BMA platform will be normally not staffed.
- Impacts are considered minor, highly localised, temporary and/or intermittent and are unlikely to interfere with the recovery of any species.
- The Project will comply with all relevant regulations and standards, including relevant conservation management plans.

EARPL has constructed and operated infrastructure within Bass Strait for more than 50 years and has a firm understanding of sensitivities and potential impacts associated with offshore activities in the area. This experience leads to a robust dataset for understanding potential environmental impacts. Conclusions on the potential for significant effects to threatened species made above therefore carry a high degree of certainty.

4.1.5.7 Do you think your proposed action is a controlled action? *

No

4.1.5.9 Please elaborate why you do not think your proposed action is a controlled action. *

A controlled action is an action that is likely to have a significant impact on a protected matter (matter of national environmental significance) designated under the EPBC Act. An assessment against the Significant Impact Criteria (SIC) in accordance with the Significant Impact Guidelines 1.1 (CoA, 2013) (SIC Guidelines) was undertaken for the 43 species listed as migratory under the EPBC Act listed in Section 4.1.5.2. The SIC assessments determined that no migratory species is likely to incur a significant impact as defined by the SIC Guidelines (see **Att 04 – Marine Assessment Report**, Table 7-6 (pages 94-96) for details). As no migratory species is likely to incur a significant impact, the proposed action is not considered a controlled action.

4.1.5.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

A detailed impact assessment with mitigation measures is included in **Att 04 – Marine Assessment Report,** Section 6 (page 61-77)**.**

Potential direct and indirect impacts to threatened species will be managed through the implementation of a number of avoid and mitigate measures which are outlined below.

Avoid

- Utilising the existing Bream pipeline to transport CO2 from the edge of State waters (3 NM, or ~5.6 km, from the shoreline) to the BMA platform, avoiding the disturbance of approximately 41 km (linear) of potential seabed habitat within Commonwealth waters and avoiding impacts associated with construction of a new pipeline
- Use of existing offshore platform and infrastructure, avoiding impacts to marine fauna and the disturbance of potential seabed habitat associated with construction of a new platform and drilling new wells
- Utilising existing infrastructure avoids unnecessary offshore construction over numerous years (i.e., drilling rig and construction vessel emissions and discharges, increased GHG emissions, noise emissions, increased turbidity etc.).

Mitigate

- The Project will continue to use the existing fleet (or equivalent) of vessels and helicopters that comply with legislative and standard controls
- Platform and support vessel lighting limited to that required for safe navigation and work requirements
- Marine fauna management measures will be included in an Environment Plan (EP), which will be approved by NOPSEMA before modification activities commence. The new EP will contain similar impacts that are authorised under the existing approved petroleum operations-related EP (accepted 2021) (such as noise and light emissions from an existing platform and from standard vessel/helicopter activities, planned discharges of utility waste from vessels, etc.) and demonstrate EARPL's experience and understanding of marine risks and controls in Bass Strait.
- An approved Well Operations Management Plan (WOMP) and Safety Case will be in place before modification works begin
- Multiple well barriers in place
- An approved CO2 monitoring and management plan suitable for a 3 MT injection scenario will be in place to ensure early detection and adaptive management of anomalous CO2 behaviour to minimise the environmental impacts of any unplanned release and any response activities. The plan will cover the injection phase and post injection.
- By modifying existing infrastructure, the Project will mitigate emissions from lengthy (multi-year) marine construction vessel supported campaigns through the ability to execute works via primarily platform-based construction campaigns of significantly shorter duration.
- Compliance with relevant legislation, including EPBC Regulations 2000 Part 8 Division 8.1. and International (International Convention for the Prevention of Pollution from Ships (MARPOL) Annex IV, V) and Australian (Marine Order 96, 95) requirements.
- Continued compliance with existing processes, such as procedures for spill containment and response, support vessel approach procedure and ongoing platform and equipment maintenance to ensure there are no substantial changes to air or water quality
- Commitment to industry standard offshore activity measures including discharges, fauna interactions, IMS and emergency response readiness.

4.1.5.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

No offsets are required.

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The project is not a nuclear action.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.7.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

The existing Bream pipeline (Commonwealth portion), BMA platform and the proposed Bream greenhouse gas storage formation are located within the Commonwealth marine area and are all located within the Southeast Marine Bioregion. The Region is generally low in nutrients with localised hotspots of primary productivity, varying depths, temperatures, and seafloor features such as trenches, canyons, sea mounts, rocky reef and soft sediment substrates that have contributed to a high level of biodiversity. There are no KEFs in the Project area; the Project area is likely to support several threatened and migratory species as identified in Section 4.1.4 and 4.1.5 of this Referral.

Impacts on the Commonwealth marine area may lead to behavioural changes in marine fauna or to injury/death of marine species. These direct and indirect impacts have been identified and described in **Att 04 - Marine Assessment Report**, Section 7.4 (pages 96-98). A summary of the impacts that may occur from Project activities include:

- Reduction in water quality
- Reduction in air quality
- Increase in ambient light and noise
- Nutrient loading in surface waters
- Smothering and alteration to benthic habitats
- Ocean acidification
- Colonisation of IMS causes displacement of native marine species
- Direct strike to fauna or change in behaviour.

The majority of impacts will occur during the topside modification phase (in the order of 6 months) and are expected to decrease significantly during operations phase as the platform transitions to a normally not staffed state where offshore activities will be limited to intermittent maintenance programs (which will occur infrequently for short durations, at approximately 1-3 year intervals).

4.1.7.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.7.6 Describe why you do not consider this to be a Significant Impact. *

See **Att 04 – Marine Assessment Report**, Table 7-7 (pages 96-98) for a comprehensive SIC assessment of the Commonwealth Marine Area.

A marine assessment was undertaken to identify and assess the potential impacts to the Commonwealth Marine Area. The marine assessment took into account the value and quality of the surrounding environment (i.e., no sensitive seabed features and the homogenous nature of the benthic habitats and communities in the Project area) and the controls to avoid or minimise the potential impacts on the marine environment. The Project is unlikely to cause a significant impact to the Commonwealth marine area, as defined by Significant Impact Guidelines 1.1 (CoA, 2013).

A summary of the assessment on the Commonwealth Marine Area for the Project is as follows:

- The Project will maximise the utilisation of existing infrastructure (including approximately 41 km of offshore pipeline in Commonwealth waters and the existing BMA platform and wells) to reduce environmental impact and avoiding potential seabed disturbance.

- The modification phase is short in duration (in the order of 6 months) and the operations phase will consist of intermittent maintenance programs (which will occur infrequently for short durations, at approximately 1-3 year intervals) once the BMA platform has transitioned to a normally not staffed state. Impacts from activities will be temporary and short-lived and will not result in substantial change in air or water quality.
- The Project will continue to use the existing vessel fleet (or equivalent) that comply with legislative and standard control measures for managing hull fouling and ballast water and the likelihood of pest species becoming established within the Commonwealth marine area is considered low.
- The Project will use the existing footprint of the BMA platform and pipeline and will not modify, destroy, remove, isolate, or decrease the availability of habitat.
- Impacts resulting from atmospheric, light or noise emissions, planned discharges or vessels in the Project area are expected to be minor, localised, and temporary, and are unlikely to affect the life cycle or spatial distribution of any threatened or migratory species at a population level.
- Impacts resulting from an unplanned release of CO2 would be temporary and would quickly dissipate in the high energy environment of Bass Strait
- The risk of a CO2 leak was assessed as low with proposed controls and an approved monitoring and management plan in place.
- The Project is located in an area of open ocean where discharges will be consistent with standard maritime activities and will be rapidly diluted and dispersed and will not result in any substantial change in water quality.
- There will be no planned discharges of organic chemicals, heavy metals, or other potentially harmful chemicals into the Commonwealth marine environment.
- There are no known underwater heritage values in the Project area and the Project will not have a substantial adverse impact on heritage values in the Commonwealth Marine Area.

4.1.7.7 Do you think your proposed action is a controlled action? *

No

4.1.7.9 Please elaborate why you do not think your proposed action is a controlled action. *

A controlled action is an action that is likely to have a significant impact on a protected matter (matter of national environmental significance) designated under the EPBC Act. An assessment against the Significant Impact Criteria (SIC) in accordance with the Significant Impact Guidelines 1.1 (CoA, 2013) (SIC Guidelines) was undertaken for the Commonwealth Marine Area. The SIC assessment determined significant impacts to the Commonwealth Marine Area (as defined by the SIC Guidelines) are unlikely (see **Att 04 - Marine Assessment Report**, Table 7-7 (pages 96-98) for details). As significant impacts to the Commonwealth Marine Area are unlikely, the proposed action is not considered a controlled action.

[LLJ1]Add citation in portal

[LLJ2]Commonwealth of Australia (CoA). (CoA, 2013)

https://www.dcceew.gov.au/environment/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance

4.1.7.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

A detailed impact assessment with mitigation measures is included in **Att 04 – Marine Assessment Report**, Section 6 (pages 61-77)**.**

Potential direct and indirect impacts to the Commonwealth Marine Area will be managed through the implementation of a number of avoid and mitigate measures which are outlined below.

Avoid

- Utilising the existing Bream pipeline to transport CO2 from the edge of State waters (3 NM, or ~5.6 km, from the shoreline) to the BMA platform, avoiding the disturbance of approximately 41 km (linear) of potential seabed habitat within Commonwealth waters and avoiding impacts associated with construction of a new pipeline
- Use of existing offshore platform and infrastructure, avoiding impacts to marine fauna and the disturbance of potential seabed habitat associated with construction of a new platform and drilling new wells
- Avoiding unnecessary offshore construction over numerous years (i.e., construction vessel emissions and discharges, increased GHG emissions, noise emissions, increased turbidity etc.).

Mitigate

- The Project will continue to use the existing fleet (or equivalent) of vessels and helicopters that comply with legislative and standard control
- Lighting limited to that required for safe navigation and work requirements

- Environmental control measures will be included in a new EP, which will be approved by NOPSEMA before modification activities commence. The new EP will contain similar impacts that are authorised under the existing approved petroleum operations-related EP (accepted 2021) (such as noise and light emissions from an existing platform and from standard vessel/helicopter activities, planned discharges of utility waste from vessels, etc.) and demonstrate EARPL's experience and understanding of marine risks and controls in Bass Strait.
- An approved Well Operation Management Plan (WOMP) and Safety Case will be in place before modification works begin.
- Multiple well barriers in place
- An approved CO2 monitoring and management plan suitable for a 3 MT cumulative injection scenario will be in place to ensure early detection and risk-based response to anomalous CO2 behaviour to minimise the environmental impacts of any unplanned release and any response activities. The plan will cover the injection phase and post injection.
- By modifying existing infrastructure, the Project will mitigate emissions from lengthy (multi-year) marine construction vessel supported campaigns through the ability to execute works via primarily platform-based construction campaigns of significantly shorter duration.
- Compliance with relevant legislation, including EPBC Regulations 2000 Part 8 Division 8.1. and International (MARPOL Annex IV, V) and Australian (Marine Order 96, 95) requirements.
- Continued compliance with existing processes, such as procedures for spill containment and response, support vessel approach procedure and ongoing platform and equipment maintenance to ensure there are no substantial changes to air or water quality
- Commitment to industry standard offshore activity measures including discharges, fauna interactions, IMS and emergency response readiness.

4.1.7.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

No offsets are required.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Project is approximately 1,500km away from the Great Barrier Reef and it will not be subject to direct or indirect impacts.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The project does not relate to coal mining or coal seam gas.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Project is not being undertaken on or in close proximity to Commonwealth Land.

The closest Commonwealth Lands are associated with defence sites and includes the Dutson Bombing Range (ID 20062, 20038 and 20037) near Sale, approximately 70 km westwards of the BMA platform.

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no Commonwealth heritage places overseas within the Project area.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

None

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

A variety of alternatives were assessed, ranging from project-wide alternatives to specific project element alternatives.

Key alternatives that were considered and discounted are summarised as follows:

Project-wide

- Do nothing.
  - Continue to vent CO2, generated from ongoing oil and gas production, from the GCP incinerator to the atmosphere and decommission BMA platform such that the storage potential of the Bream reservoir would very likely not be realised.
- Re-use of the CO2 captured at GCP.
  - EARPL has explored re-use options and has signed agreements to send some of the CO2 (that would be otherwise vented) to Air Liquide Australia and BOC, who will then process and provide the gas to food, beverage, hospitality, and medical industries. The amount to be re-used only equates to a small percentage of the overall CO2 that is currently vented and re-use of all the CO2 is not currently feasible. This option will require the remaining CO2 to continue to be vented.
- Alternative CO2 storage locations – alternative reservoirs (e.g., GBJV's Snapper, Barracouta and Marlin reservoirs) were assessed and although these fields are expected to share many characteristics with the Bream field, the use of Bream as a greenhouse gas storage formation would provide the following additional benefits:
  - Bream has demonstrated subsurface characteristics required for safe injection and storage through an operations history of natural gas injection and storage.
  - The Bream field ceased production in 2020, and its associated infrastructure (platform, well, pipeline) is considered suitable for greenhouse operations (Barracouta, Marlin, Snapper, and Tuna fields are still producing).

Bream platform

- Alternative energy source for existing BMA platform
  - Use of diesel only was considered and rejected due to increased emissions, additional vessel trips required for diesel supply, logistics required for a normally not staffed facility and cost.

Valve Site 3 to Bream platform

- New pipeline between Valve site 3 and BMA platform
  - Other alternative pipeline routes between Valve site 3 and BMA platform were considered at a high level. However, all other routes were rejected as the Bream pipeline has been assessed to be suitable for transport of compressed CO2 and a new pipeline would involve a lengthy construction period resulting in additional land and seabed disturbance, and an increase in environmental and social impacts and regulatory risk.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 01 - Figures.pdf This document contains the figures that support this referral		No	High
#2.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High
#3.	Document	Att 06 - Proposed Action Details.pdf This document provides details of the proposed action as the word limit was exceeded for this section		No	High
#4.	Link	(Carbon Storage Taskforce, 2009) National Carbon Mapping and Infrastructure Plan – Australia https://www.globalccsinstitute.com/archive/hub/p..			High

1.2.7 Public consultation regarding the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document				

		Att 02 - Summary of consultation.pdf This document contains a summary of consultation records related to the Project	No	High	
#2.	Document	Att 05 – Description of consultation.docx This document contains a description of consultation for this section as the word limit was exceeded	No	High	
#3.	Link	(EARPL, 2022) SEA CCS Pipeline Consultation Plan https://www.exxonmobil.com.au/-/media/australia/..		High	
#4.	Link	(EARPL, 2022) SEA CCS Project Webpage https://www.exxonmobil.com.au/Energy-and-environ..		High	
#5.	Link	(EARPL, 2023) SEA CCS Stakeholder Consultation Plan https://www.exxonmobil.com.au/-/media/australia/..		High	

1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 03 - EARPL Environmental Policy.pdf This document is the Environmental Policy adopted by Esso		No	High

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Link	(CarbonNet, 2018) Pelican 3D Marine Seismic Survey, Environmental Plan Summary https://earthresources.vic.gov.au/__data/assets/..			High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High

3.2.2 Vegetation within the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High
#2.	Link	(CarbonNet, 2018) Pelican 3D Marine Seismic Survey Environment Plan Summary https://earthresources.vic.gov.au/__data/assets/..			High
#3.	Link	(Coleman et al., 2007) Depth, sediment type, biogeography and high species richness in shallow-water https://doi.org/10.1071/MF06098			High
#4.	Link	(ECC, 2000) Marine Coastal and Estuarine Investigation http://www.veac.vic.gov.au/ecc/marine/report2000..			High

3.4.1 Hydrology characteristics that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Link				

		(DoE, 2015) South-east marine region profile A description of the ecosystems, conservation values an https://www.dcceew.gov.au/sites/default/files/do..			High
#2.	Link	(Michael et al., 2013) Basin-scale impacts of industrial-scale CO2 injection on petroleum and ground https://www.sciencedirect.com/science/article/pi..			High

4.1.3.3 (Ramsar Wetland) Why your action is unlikely to have a direct and/or indirect impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Link	(DSEWPaC, 2010) Gippsland Lakes Ramsar site Ecological Character description https://www.dcceew.gov.au/sites/default/files/en..			High

4.1.4.2 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High

4.1.4.6 (Threatened Species and Ecological Communities) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High
#2.	Link	(CoA, 2013) Matters of National Environmental Significance Significant Impact Guidelines 1.1 https://www.dcceew.gov.au/sites/default/files/do..			High

4.1.4.9 (Threatened Species and Ecological Communities) Why you do not think your proposed action is a controlled action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High
#2.	Link	(CoA, 2013) Matters of National Environmental Significance Significant impact guidelines 1.1 https://www.dcceew.gov.au/sites/default/files/do..			High

4.1.4.10 (Threatened Species and Ecological Communities) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High

4.1.5.2 (Migratory Species) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High

4.1.5.6 (Migratory Species) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High
#2.	Link	(CoA, 2013) Matters of National Environmental Significance Significant Impact Guidelines 1.1 https://www.dcceew.gov.au/sites/default/files/do..			High

4.1.5.9 (Migratory Species) Why you do not think your proposed action is a controlled action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High
#2.	Link	(CoA, 2013) Matters of National Environmental Significance Significant impact guidelines 1.1 https://www.dcceew.gov.au/sites/default/files/do..			High

4.1.5.10 (Migratory Species) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High

4.1.7.2 (Commonwealth Marine Area) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High

4.1.7.6 (Commonwealth Marine Area) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High
#2.	Link	(CoA, 2013) Matters of National Environmental Significance Significant Impact Guidelines 1.1 https://www.dcceew.gov.au/sites/default/files/do..			High

4.1.7.9 (Commonwealth Marine Area) Why you do not think your proposed action is a controlled action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High
#2.	Link	(CoA, 2013) Matters of National Environmental Significance Significant impact guidelines 1.1 https://www.dcceew.gov.au/sites/default/files/do..			High

4.1.7.10 (Commonwealth Marine Area) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 04 - Marine Assessment Report.pdf This document contains the Marine Assessment Report that support this referral		No	High

5.2 Declarations

Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	62091829819
Organisation name	ESSO AUSTRALIA RESOURCES PTY LTD
Organisation address	Level 9, 664 Collins St, Docklands, VIC 3008
Representative's name	Lucy Levecke
Representative's job title	Environment & Regulatory Advisor
Phone	+61 3 9261 0000
Email	lucy.j.levecke@exxonmobil.com
Address	Level 9, 664 Collins St, Docklands, VIC 3008

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ By checking this box, I, **Lucy Levecke of ESSO AUSTRALIA RESOURCES PTY LTD**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	62091829819
Organisation name	ESSO AUSTRALIA RESOURCES PTY LTD
Organisation address	Level 9, 664 Collins St, Docklands, VIC 3008
Representative's name	Emma Ogilvie
Representative's job title	SEA CCS Project Manager
Phone	+61 3 9261 0000
Email	emma.m.ogilvie@exxonmobil.com
Address	Level 9, 664 Collins St, Docklands, VIC 3008

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ I, **Emma Ogilvie of ESSO AUSTRALIA RESOURCES PTY LTD**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

✔ Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ I, **Emma Ogilvie of ESSO AUSTRALIA RESOURCES PTY LTD**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *