Southern Winds Offshore Wind Project

Application Number: **01537** Commencement Date: **15/11/2022** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Southern Winds Offshore Wind Project

1.1.2 Project industry type *

Energy Generation and Supply (renewable)

1.1.3 Project industry sub-type

Wind Farm

1.1.4 Estimated start date *

1/01/2027

1.1.4 Estimated end date *

1/01/2067

1.2 Proposed Action details

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

Southern Winds OWP Project Pty Ltd ACN 662232895 as trustee for the Southern Winds OWP Project Trust on behalf of BlueFloat Energy International S.L.U propose the Southern Winds Offshore Wind Project (the Project).

The Project is comprised of an offshore wind farm component and supporting transmission infrastructure located both onshore and offshore, located off the coast of south-west Victoria and south-east South Australia. The Project design is continuing to develop as further technical investigations (environmental and engineering), community and stakeholder consultation, and commercial and technological considerations are completed. The Project for consideration in this referral consists of the following main components as illustrated in the attached figures (**Attachment 1**, pp 1-4):

- Figure 1 (Project Location Context)
- Figure 2 (Project Area and Study Area)
- Figure 3 (EPBC Act Referral Area)
- Figure 4 (EPBC Act Disturbance and Avoidance Areas)

Offshore Components in the **Commonwealth** jurisdiction

The offshore components of the Project are located in Commonwealth Waters, approximately 8-20 kilometres (km) off the coastline between Cape Douglas in South Australia and Nelson in Victoria, covering an offshore area of approximately 290 km2, as shown in **Attachment 1, Figure 1 and 2**:

- 77 “bottom-fixed” offshore wind turbine generators (WTG) generating up to 1.155 GW of electricity
- Each WTG would have a capacity of between 15 MW and 20 MW, a hub height between 165 m and 190 m, and rotor diameters of 250 m to 275 m
- Two (2) offshore substations
- Turbines and offshore substations will require installation of foundations in the seabed, with associated scour protection
- A network of buried or mechanically protected inter-array subsea cables connecting the WTGs together and to the offshore substations

The exact location and specification of the WTGs will be determined following site investigations, supply chain considerations and completion of further environmental assessment.

Offshore Components traversing the **Commonwealth and Victorian State** jurisdiction

- Subsea export cables extending from the offshore substations to the onshore landing locations, 72 km and 42 km in length respectively for Options 1 and 2 (as shown in **Attachment 1, Figure 2**). These options are subject to ongoing investigation but are designed to avoid direct interaction with the Discovery Bay Marine National Park.

Onshore Components in the **Victorian State** jurisdiction

Onshore transmission infrastructure for Options 1 and 2 will be located in the Glenelg Local Government Area (LGA) (see **Attachment 1, Figure 2**).

Option 1 is the preferred transmission route connecting into the Portland Aluminum Smelter switchyard so that the existing Portland to Heywood transmission line connects the Project to the National Electricity Market (NEM), preventing the need for a new overland transmission line for the Project.

- **Option 1**: Subsea export cables will travel southeast from the more easterly offshore substation and land near the north-west corner of the Narrawong Coastal Reserve, where they will connect to onshore cables in a transition joint bay. The onshore cables will then connect into the existing Portland Aluminum Smelter switchyard. Works may be required to connect the Project into the switchyard; or
- **Option 2**: Subsea cables will travel south-east from the more easterly offshore substation and land on the shoreline near the south-eastern corner of the Glenelg Estuary and Discovery Bay Ramsar Wetlands site and north of the Discovery Bay Marine National Park (avoiding direct contact) before connecting to onshore cables in a transition joint bay. These onshore cables will then continue underground or overhead in a north-east direction through Gorae West for approximately 29 km to join directly to the NEM at Heywood Terminal Station, via a new dedicated transmission line.

For transmission route option 1, it is assumed that the Project will terminate at the Portland Aluminum Smelter switchyard and that no works will be required along the existing 500 kV transmission line between the Portland Aluminum Smelter switchyard and the existing Heywood Terminal Station. For completeness and flexibility as the Project evolves, the desktop studies have been conducted to include the existing transmission route up to Heywood Terminal Station within the Study Area for option 1.

A new transmission line easement will be required for Option 2 which will include land required for the transmission infrastructure plus ongoing maintenance and operations including access tracks. The average easement width for double circuit 500 kV transmission lines is expected to be 80 to 100m. The steel lattice towers for the 500 kV line are expected to be of a height up to 65 m (with some up to 80 m).

It is noted that the transmission line options proposed for the Project were identified prior to the release of the Victorian State Government's *Offshore Wind Implementation Statement 1* (October 2022) and accordingly the location of the grid connection may be subject to further review and consideration.

Existing port and harbour modifications

The Project would use existing port facilities in the region (expected to be expanded/upgraded) to support construction and operational activities including the transport and delivery of equipment and Project components, and to facilitate the use of maintenance vessels for offshore activities. Port expansion and/or upgrade activities are not included within the scope of the Project (and this referral) and are expected to be delivered by a third party to service several offshore wind projects in the region. A range of ports are currently being considered including, but not limited to, the Port of Portland, Barry Beach Marine Terminal, Port Anthony, Port of Hastings and Port of Geelong in Victoria and Bell Bay in Tasmania. The port works will be subject to their own independent assessments and approvals.

All technical assessments completed to support this referral applied a Study Area of 5 km from the offshore project infrastructure and 2 km from the onshore transmission infrastructure.

Details of the construction, operation and decommissioning activities associated with the Project are provided in **Attachment 2**.

Proposed Actions

The Project as described above has the potential for the following listed proposed actions which may impact matters of national environmental significance as detailed in this referral. See **Attachment 1**, **Figure 4** for indicative disturbance and avoidance areas for the Project. An indicative disturbance area of approximately 30,733 hectares is provided as an estimate only, with a conservative approach taken to include the whole Project Area consisting of a 100m potential direct and indirect impact area around the transmission corridor (onshore and offshore) and all of the area between offshore turbines and substations (even though turbine foundations will only directly impact a small portion of this), therefore the ultimate disturbance area will be much smaller. We note some indirect impacts may extend beyond this area however these are unable to be defined by a boundary at this time without further assessment.

- Vegetation clearance for the construction and operation of the onshore transmission line, substation and ancillary services (e.g. access tracks)
- Groundworks/excavation for underground cable laying (trenching or boring), foundations for substation and transmission line towers
- Dredging and/or trenching of seabed for subsea export cable laying to connect the offshore substations to the shore landing site
- Piling of seabed for turbine and substation foundations
- Increase in marine vessels during construction and decommissioning
- Operation of wind turbines and substations offshore
- Operation of transition joint bay and transmission line onshore

An additional EPBC Act referral has also been prepared for the non-intrusive marine investigations. This has been prepared by the Project's marine consultant, BMT, and will be submitted in parallel with this 'whole of Project' referral. A third EPBC referral is also being prepared for the marine geophysical studies required to inform the impact assessment and approvals of the Project.

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
2022/09436	Southern Winds Offshore Wind Project Initial Marine Field Investigations

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

This referral concerns the main Project development details, whilst associated referrals including 2022/09436 have been/will be submitted in relation to supporting technical studies e.g. marine investigations, required to inform the Project's development and approvals which require their own EPBC Act referral to consider potential MNES impacts.

EPBC Act referral 2022/09436 has been prepared for the non-intrusive marine investigations which would occur in the Project's feasibility stage. This has been prepared by the Project's marine consultant, BMT, and has been submitted in parallel with this 'whole of Project' referral. A third EPBC referral is being prepared for the marine geophysical studies required to inform the impact assessment and approvals of the Project.

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

The Project is located in Commonwealth Waters and Victorian coastal waters and land. See **Attachment 1, Figure 2**.

The following Commonwealth and State approvals and consents will be, or are likely to be, required.

Commonwealth Legislation

Environment Protection and Biodiversity Conservation Act 1999

The Project has potential to significantly impact on the following four Matters of National Environmental Significance (MNES) protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act):

- Wetlands of international importance (listed under the Ramsar Convention): In Victoria, the Glenelg Estuary and Discovery Bay Wetlands Ramsar site intersects with the Study Area, however no Project infrastructure is proposed to be located within the Ramsar site. The Piccanninnie Ponds Karst Wetlands Ramsar site is located in South Australia approximately 10 km west from the nearest offshore wind turbine and is a significant distance from the cable landing and onshore transmission route.
- Listed threatened species and ecological communities: The preliminary biodiversity assessment identified 17 flora and 55 fauna threatened species listed under the EPBC Act which are considered likely to occur within the Study Area. There is potential for six listed threatened ecological communities (TECs), two of which are listed as critically endangered, three endangered and one as vulnerable under the EPBC Act to occur within the onshore and offshore Study Area. The Project is located in proximity to the Discovery Bay Marine National Park but does not directly interact with the park.
- Listed migratory species: The Study Area contains wetlands, coastal, and offshore habitat features that support up to 86 migratory species listed under the EPBC Act, including 8 terrestrial birds, 34 shorebirds, wetland birds and terns, and 44 marine species (including 27 seabirds).
- Commonwealth marine areas: The offshore component of the Project is located within Commonwealth marine waters.

The Project may also be required to seek approval under the EPBC Act for field studies required to obtain baseline data to support environmental investigations. Two separate EPBC Act referrals are being prepared in parallel to this referral, one for the marine studies and one for the geophysical and geotechnical studies.

The following permits may also be required under the EPBC Act:

- A permit to kill, injure, take, trade, keep or move a listed species or ecological community, a listed migratory species, or a listed marine species in or on a Commonwealth area.
- A permit to take, keep, move, interfere with a cetacean and to possess or treat a cetacean (whales, dolphins).
- A permit to undertake activities in Australian Marine Parks within Commonwealth waters

Offshore Electricity Infrastructure Act 2021

The Project will require licensing under the *Offshore Electricity Infrastructure Act 2021* to permit feasibility investigations, construction and operation of wind turbines and transmission infrastructure within the licence area. Environmental, heritage and social investigations will be used as inputs to licence applications and in the identification of management and mitigation measures that will form part of licence conditions/environmental management plans. An application for a licence can only be made for a proposal if it is located within an area that has been declared for offshore renewable energy by the Minister for Climate Change and Energy. Pursuant to the Act, the Minister has indicated the intention of declaring the Southern Ocean region off the coast of Portland in Victoria for offshore renewable energy projects, however formal consultation on this area is yet to be announced.

If this area is formally announced by the Minister, a 60-day consultation period will commence, following which the Minister can formally declare the area suitable for offshore use. The Project can then make an application for a feasibility licence.

Native Title Act 1993

The onshore components of the Project fall within boundaries of the existing Gunditj Mirring Traditional Owners Aboriginal Corporation Native Title claim (VCD2007/001), for which the registered native title body corporate (RNTBC) is the Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC) (**Attachment 1, Figure 19**). Both the onshore and offshore components of the Project in Victoria lie within the lands of the GMTOAC, where the coast and marine environment within the Study Area contain the culturally-significant Budj Bim Cultural Landscape.

Parts of the onshore component of the Project are located where there are registered Indigenous Land Use Agreements (VI2006/004, VI2010/001 and VI2015/002) and Future Act Notice VS2000/0025. This specific Future Act Notice concerns petroleum exploration in the Portland region. Lodged in 2000 and is likely no longer relevant.

The offshore Study Area also extends into South Australian waters (although no Project Area lies within the Southern Australia jurisdiction). The Traditional Owners of the land are the Boandik people, represented by Burrandies Aboriginal Corporation. A scheduled application was identified for First Nations of the South East (Tribunal Number SC2017/002), including the Traditional lands of the Boandik peoples.

Underwater Cultural Heritage Act 2018

The Underwater Cultural Heritage Act protects Australia's shipwrecks, sunken aircraft and other types of underwater cultural heritage including Australia's Aboriginal and Torres Strait Islander Underwater Cultural Heritage in Commonwealth waters. There are five shipwrecks of heritage value within the offshore Study Area. Under this Act, the Project will obtain the relevant permits, adhere to exclusion zones and notify the department of any previously un-notified artefacts that are found in and around the Study Area.

State Legislation (Victoria)

Environment Effects Act 1978

A referral under the *Environment Effects Act 1978* is being submitted in parallel to this referral to the Victorian Minister for Planning to determine the likelihood that the Project may have significant effect on the environment, having regard to the referral criteria set out in the *Ministerial Guidelines for assessment of environmental effects under the Environment Effects Act 1978* (DELWP, 2006).

Planning and Environment Act 1987

The use and development of onshore Project infrastructure (transmission line and substation), and removal of native vegetation within Victorian jurisdictional boundaries will require planning permission under the *Planning and Environment Act 1987*. The Project is subject to the Glenelg Planning Scheme. Planning approval is likely to take the form of a Planning Scheme Amendment. This amendment would introduce a Specific Controls Overlay and incorporated document to the land affected by the project, facilitating the use and development and operation to occur without the need to obtain multiple planning permits.

Zoning and overlay controls apply to the onshore components of the Project subject to the Glenelg Planning Scheme. The majority of the onshore Study Area is in the Farming Zone, along with some sections of Public Conservation and Resource Zone, Rural Conservation Zone, Rural Living Zone, Industrial Zone, Special Use Zone and Transport Zone. Various environmental and landscape overlays affect areas of the Project Area including the Airport Environs, Floodway and Bushfire Banagement Overlays.

Marine and Coastal Act 2018

Consent under the *Marine and Coastal Act 2018* is required for the use and development of the Victorian marine area or coastal Crown land within 200 m inland of the high-water mark.

Aboriginal Heritage Act 2006

A mandatory Cultural Heritage Management Plan (CHMP) will be required to be prepared under the *Aboriginal Heritage Act 2006* for the Project as it is considered a high impact activity in an area of cultural heritage sensitivity. The preparation of a CHMP will also be mandatory if an EES is required. The CHMP will be prepared in consultation with the GMTOAC (Gunditj Mirring Traditional Owners Aboriginal Corporation), who will approve the CHMP as the Registered Aboriginal Party (RAP).

Secondary Approvals

A range of secondary approvals would also likely be required under Victorian legislation to implement the Project, including:

- Potential permit to remove protected flora on public land under the *Flora and Fauna Guarantee Act 1988*
- Potential consent under the *Heritage Act 2017* for impact on any sites on the Victoria Heritage Register and / or the Victorian Heritage Inventory and to impact on archaeological relics (non Aboriginal archaeological relics more than 50 years old)
- Potential license under the *Water Act 1989* to construct, alter, operate, or decommission works on, over or under a waterway, to construct a bore or to extract groundwater
- Potential authorisation to relocate wildlife under the *Wildlife Act 1975*
- Consent under the *Road Management Act 2004* to conduct works in, on, under or over a road from the coordinating road authority (Regional Roads Victoria, Department of Transport or Council, depending upon the category of road)
- Consent, lease and/or licence under the *Crown Land (Reserves) Act 1978* to use and develop Crown land.

State Legislation (South Australia)

The Project has no interface with South Australian waters or land and therefore, there is no applicable South Australian legislation which applies. Irrespective of this, engagement will be undertaken with regulators and nearby stakeholders in South Australia.

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. *

Authentic and respectful partnerships and consultation with Traditional Owners, through Gunditj Mirring Traditional Owner Aboriginal Corporation (GMTAOC) (as the Registered Aboriginal Party (RAP) and Registered Native Title Body Corporate (RNTBC)) and all stakeholders will form an integral and vital role in the development of the Project. The Project will prepare a Stakeholder and Engagement Strategy which will to create social value by delivering outcomes that benefit Traditional Owners and local communities, whether that be through social, economic, or environmental means.

The Project is planning to carry out extensive consultation with relevant stakeholders. These stakeholders include host landholders, proximal landholders and communities, ocean users, Traditional Owners, local and State government agencies, local business and service providers, community and development groups and environmental groups.

The Project is committed to exploring partnerships with local stakeholders to include (but not limited to) commercial and investment arrangements, skills and jobs training, community funds, scholarships and apprenticeships, and opportunities for local supply chain, businesses and service providers.

The Project's approach to Traditional Owners is one of partnership as well as consultation. We are committed to early communication with the Traditional Owners so that we can provide updates and receive input from First Nations perspectives, explore partnerships and opportunities, understanding Traditional Owners' relationship to the land and sea and hearing First Nation stories, minimise impacts on the cultural and heritage importance and ensure involvement in project design, construction and procurement.

Consultation has been undertaken with the Victorian Department of Energy, Environment and Climate Action (DEECA) and the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) through pre-referral meetings and discussions to date providing an overview of the project description, timeframes and studies proposed.

To date, consultation has been undertaken with:

Commonwealth

- DCCEEW – South Australian and Victorian assessment unit

- Australian Energy Market Operator

Victoria:

- DECCA
- First Peoples - State Relations
- GMTAOC
- Environment Protection Authority
- Heritage Victoria
- Glenelg Shire Council
- Moyne Shire Council
- Department of Transport and Ports Victoria
- Civil Aviation Services Authority
- Country Fire Authority
- Port of Portland
- AusNet
- Portland Aluminium Smelter

South Australia

- Department of Energy and Mining
- Department of Environment and Water
- Department of Transport and Infrastructure
- Heritage SA
- District Council of Grant
- City of Mount Gambier Council

Consultation is also intended to be undertaken with the Burrandies Aboriginal Corporation in South Australia.

A Preliminary Social Risks and Opportunities Assessment has been undertaken for the Project and is provided in **Attachment 3**.

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.

See our Privacy Policy to learn more about accessing or correcting personal information or making a complaint. Alternatively, email us at privacy@awe.gov.au.

☑ **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	18059519041
Organisation name	UMWELT (AUSTRALIA) PTY. LTD.
Organisation address	75 York Street, Teralba, NSW 2284

Referring party details

Name	Caroline Funnell
Job title	Principal Environmental Consultant

Phone	0449 947 686
Email	cfunnell@umwelt.com.au
Address	Level 7, 180 Flinders Street, Melbourne, Victoria 3000

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	662232895
Organisation name	Southern Winds OWP Project Pty Ltd
Organisation address	The Commons, 11 Wilson Street, South Yarra, Victoria 3141

Person proposing to take the action details

Name	Southern Winds OWP Project Pty Ltd C/- Deb Neumann
Job title	Director, Environment and Planning, BlueFloat Energy on behalf of Southern Winds Project P/L
Phone	0414811290
Email	dneumann@bluefloat.com
Address	The Commons, 11 Wilson Street, South Yarra, Victoria 3141

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

No

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

Yes

1.3.2.16 Describe the nature of the trust arrangement in relation to the proposed action. *

The referred action will be undertaken by Southern Winds OWP Project Pty Ltd (ACN 662 232 895) as trustee for the Southern Winds OWP Project Trust. BlueFloat Energy International S.L.U is the Project developer.

Please refer to **Attachment 4** for the Trust Deed.

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. *

Southern Winds OWP Project Pty Ltd is a newly established entity for the development of the Southern Winds Offshore Wind Project. This entity has no history of past environmental management.

BlueFloat Energy International S.L.U is a nimble and fast-growing offshore wind developer shaping the global energy transformation by bringing scaled decarbonisation solutions to new markets. Leveraging the team's extensive knowledge and hands-on experience in both fixed foundation and floating offshore wind project development and execution, they are at the forefront of the emerging global market for offshore wind. Their portfolio of both fixed foundation and floating wind projects comprises over 22 GW of planned capacity in eight countries across the globe.

BlueFloat Energy International S.L.U has a satisfactory record of responsible environment management and do not have 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 them.

Southern Winds OWP Project Pty Ltd has also submitted a separate referral for the Sothern Winds Offshore Wind Project (EPBC number 2022/09436). This referral relates to the initial marine field investigations for the Project.

Greater Gippsland OWP Project Pty Ltd as trustee for Greater Gippsland OWP Project Trust on behalf of BlueFloat Energy International S.L.U has submitted two separate referrals for the Greater Gippsland Offshore Wind Project. One referral is for the Project itself (EPBC number 2022/09379) and the other is for the initial marine field investigations (EPBC number 2022/09374).

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

The Southern Winds OWP Project Trust is committed to providing and maintaining a safe, healthy and positive workplace for its people and acting in ways that minimise adverse environmental impacts and promote sustainability. Hazards and risks to health and safety will be eliminated or minimised, as far as is reasonably practicable.

The responsibility for managing HS&E issues sits with the person in control of the Southern Winds OWP Project Trust, however workers also have important responsibilities for health and safety in the workplace.

The HS&E applies to all workers, partners, contractors and consultants across all sites of the Southern Winds OWP Project Trust. It is a requirement to adhere to this policy throughout the life of the Project.

In line with our HS&E goals, the Southern Winds OWP Project Trust is committed to:
• Adhering to high standards to protect the environment where we do business and integrating environmental considerations into all business activities
• Meeting or exceeding our regulatory obligations for HS&E
• Eliminating or minimise all workplace hazards and risks as far as is reasonably practicable
• Supervising workers to ensure work activities are performed safely
• Providing appropriate safety equipment and personal protective equipment
• Pursuing a no harm policy that applies to people, local communities, the environment, cultural heritage and project assets in the places where we operate
• Using resources and energy efficiently, minimising emissions and waste and promoting the sustainability of the natural resources we use
• Continually reviewing and improving the way we operate in order to minimise HS&E risks and impacts, and to promote best practice
• Recognising our responsibility and accountability in managing HS&E risks associated with our business activities
• Supporting our personnel, partners and contractors by providing training and guidance to manage HS&E as a critical business activity. This includes sharing our own objectives, learnings and commitments
• Responding quickly and transparently to any HS&E incidents resulting from our operations
• Providing a suitable injury management and return to work program

Please refer to **Attachment 5** - Health, Safety and Environmental (HSE) Policy for Southern Winds OWP Project Pty Ltd.

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	662232895
Organisation name	Southern Winds OWP Project Pty Ltd
Organisation address	The Commons, 11 Wilson Street, South Yarra, Victoria 3141

Proposed designated proponent details

Name	Southern Winds OWP Project Pty Ltd C/- Deb Neumann
Job title	Director, Environment and Planning, BlueFloat Energy on behalf of Southern Winds Project P/L
Phone	0414811290
Email	dneumann@bluefloat.com
Address	The Commons, 11 Wilson Street, South Yarra, Victoria 3141

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	18059519041
Organisation name	UMWELT (AUSTRALIA) PTY. LTD.
Organisation address	75 York Street, Teralba, NSW 2284
Representative's name	Caroline Funnell
Representative's job title	Principal Environmental Consultant
Phone	0449 947 686
Email	cfunnell@umwelt.com.au
Address	Level 7, 180 Flinders Street, Melbourne, Victoria 3000

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	662232895
Organisation name	Southern Winds OWP Project Pty Ltd
Organisation address	The Commons, 11 Wilson Street, South Yarra, Victoria 3141
Representative's name	Southern Winds OWP Project Pty Ltd C/- Deb Neumann
Representative's job title	Director, Environment and Planning, BlueFloat Energy on behalf of Southern Winds Project P/L
Phone	0414811290
Email	dneumann@bluefloat.com
Address	The Commons, 11 Wilson Street, South Yarra, Victoria 3141

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? *

Option 1 – Portland Aluminum Smelter, Maderia-Packet Road, Point Danger, VIC 3305; Option 2 - Kobo Creek Rd, Portland West, VIC 3305

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? *

The offshore component of the Project is located within Commonwealth Waters. A commercial licence under the *Offshore Electricity Infrastructure Act 2021* will be sought from the Minister for Climate Change and Energy to enable the Project to construct and operate the offshore wind project in Commonwealth Waters.

The onshore Project infrastructure will be predominantly located within freehold land. Freehold land required for the Project will be secured through commercial agreements negotiated with relevant landholders. There are also parcels of Crown land within the onshore Study Area – the Project will work with the land manager to determine the appropriate form of lease or license required, depending on the tenure of the land.

3. Existing environment

3.1 Physical description

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

A Preliminary Desktop Biodiversity and Constraints Assessment (Biosis, 2022) (see **Attachment 6,** Section 4.1-4.4, pp16-20) and a **Preliminary Desktop Marine Environmental Assessment** (BMT, 2022) (see **Attachment 7,** Section 5.1-5.3, pp14-27) have been prepared to support this referral and have assessed the whole Project and surrounding Study Area as shown in **Attachment 1, Figure 2**.

Offshore

Field investigations to determine the condition of the physical and biological marine environment of the Study Area have not yet been undertaken, however a desktop assessment was completed to inform this referral. Benthic ecology surveys are planned, which would further characterise the current condition of benthic habitats in the Study Area. There are no marine invasive species known from the Study Area, however it is possible that species could be identified during benthic ecology and fish ecology surveys that are planned.

The Study Area is located in the south east marine region (Department of Environment, 2015), which includes Discovery Bay and the Bonney Coast Upwelling key ecological feature (see **Attachment 7**, Section 5.1, pp. 15). This brings a cold nutrient rich water to the sea surface, attracting a high diversity of species and is a key feeding area for blue whales *Balaenoptera musculus* and several EPBC Act listed species attracted to the food source (Attachment 7). There are three biounits in the region as discussed in the next section.

Two Ramsar sites are located within the Study Area (see **Attachment 7**, Section 5.3, pp. 23). The Glenelg Estuary and Discovery Bay Wetlands Ramsar site intersects with the Study Area, however no Project infrastructure is proposed to be located within it. The Piccanninnie Ponds Karst Ramsar Wetlands site is located in South Australia approximately 10 km west from the nearest offshore wind turbine and is a significant distance from the cable landing and onshore transmission route.

Onshore

Land uses within the onshore Study Area are predominantly agricultural, with areas of state parks and conservation reserves used for recreational activities. Several areas of public land intersect the onshore project component and will be avoided where possible.

The Study Area is located within three Bioregions: Bridgewater, Glenelg Plain and the Victorian Volcanic Plain (see **Attachment 6**, Section 4.1, pp.17). A total of 26 Ecological Vegetation Classes (EVCs) across the three bioregions are modelled to occur within the Study Area (see **Attachment 1, Figure 5** and **Attachment 6**, Section 4.2, pp.17-19). However, the extent and condition of native vegetation within the Project Area has not been determined as field investigations have not yet been undertaken for the Project. Most of the onshore Study Area is cleared agricultural land which holds limited ecological value. Higher quality native vegetation is likely to be present within the reserves and parks throughout the Study Area.

Cleared land for the purpose of agricultural practices within the study area holds limited ecological value to most fauna, with exceptions being some species of wetland birds and amphibians. However, patches of remnant vegetation may provide important connections between higher quality habitats. The remaining area comprises a range of forest, scrub, woodland, grassland, wetland, heathland and saltmarsh vegetation which is of high ecological value to fauna. Woodland and forest vegetation may provide suitable habitats for various terrestrial bird species including some that are threatened. In addition, these vegetation types provide habitat for arboreal mammals and reptiles. Scrub and heathland vegetation provides further habitat to a range of ground-dwelling fauna including small mammals, reptiles and birds.

Several wetlands and waterways within proximity to the Study Area are of high value to a range of shorebirds and other wetland birds (**Attachment 6**, Section 4.3, pp.20). The Glenelg Estuary and Discovery Bay Ramsar Wetlands site (see **Attachment 1, Figure 9**) provides important habitat for numerous resident and migratory shorebirds and waterbirds. The Piccaninnie Ponds Karst Ramsar Wetlands site supports a winter roosting population of Orange-bellied Parrot *Neophema chrysogaster*. Fawthrop Lagoon, although disturbed, provides some habitat for rare and threatened waterbirds species. Wetlands and surrounding waterways throughout the Study Area also provide habitat for a range of ichthyofauna and other aquatic species. The coastal habitat throughout the Study Area provides habitat for both migratory and resident shorebirds.

Bass Strait is considered to be an area of high importance for a large number of marine predators, particularly for a vast number of seabird species that breed and forage within this area. The offshore environment is also likely to provide foraging habitat for several threatened and/or migratory seabirds including various albatross and petrel species.

While detailed investigations have not been undertaken, the presence of weeds is assumed to be likely across the Study Area predominantly within agricultural land. It would be expected that the concentration of weeds would be significantly less in areas of extensive native vegetation such as the state forests and conservation reserves. The relatively highest concentration of weed infestation is likely to occur in cleared agricultural paddocks where noxious weeds and common pasture grasses listed under the *Catchment and Land Protection Act 1994* are often present.

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

Existing Offshore Uses (see **Attachment 7,** Section 5.1-5.3, pp14-27 for more information)

The Discovery Bay Marine National Park is located within the Study Area. The subsea cabling options avoid the Discovery Bay Marine National Park and are proposed to be located to its north and south. The marine park is recognised as an important habitat for commercial fish, including tuna and mackerel (Director of National Parks, 2013), and is a key migratory area for whales including humpback, fin, blue and sei whales.

The fishing industry is one of the largest employers in the region, including indirect employment such as fish processing, marine engineering, ship building and maintenance. Commercial fishing directly from Portland involves fishing for sharks, abalone, crayfish and squid. The area around between Cape Nelson and Cape Bridgewater has previously been reported as the largest catch of Blacklip Abalone in the Western Zone of Victoria and in the top ten locations within Victoria (Gorfine, 2002).

Commercial fishing directly from Portland involves fishing for sharks, abalone, crayfish and squid (**Attachment 7**, Section 53., pp.24). Over the South Australia border, Port MacDonnell houses Australia's largest rock lobster fishing fleet. A number of commercial fisheries exist within the Commonwealth Waters of the offshore Study Area and nearby surrounding area including Southern and eastern Scalefish and Shark Fishery, Southern Squid Jig Fishery, Southern Tuna and Billfish Fishery and the Small Pelagic Fishery.

There are no aquaculture leases within the Study Area.

Cape Bridgewater is a popular destination for whale watching, visiting seal colonies and bushwalking. Surfing and diving are also popular activities around the headland. There are two recreational boat ramps near the Project in Victoria, one at Portland and one at Nelson. There are several whale watching and fishing charters that launch from Portland and may visit the Study Area. The nearest boat ramps in South Australia are at Eight Mile Creek and Port MacDonnell East and West.

The 2021 vessel tracking information for the region shows the main shipping channel from the Port of Melbourne to the Port Adelaide is within proximity to the Study Area (Marine Traffic, 2022) (see **Attachment 7,** Section 5.6, pp 62), with between 35,000 to 200,000 vessel movements per year (Marine Traffic, 2022). Further consultation with the major shipping ports and Harbor Masters will be required to understand if the wind turbines represent a navigational hazard for larger container vessels.

Proposed Offshore Uses

The VIC Offshore Windfarm is a project proposed by Australis Energy Ltd comprising 62 wind turbine generators (495MW) and lies directly east of our Project in the Discovery Bay area. This Project has been referred under the EPBC Act and *Environment Effects Act 1978* and technical assessments are progressing, whilst planning approval has not yet been granted. Also, Alinta Energy in partnership with Portland Aluminum are in the pre-planning phase for the 1000MW Spinifex offshore wind project to the east of Portland to provide 100% renewable energy to the Aluminum Smelter.

Existing Onshore Uses (see **Attachment 6**, Section 4.1-4.4, pp16-20 for more information)

Land within the onshore Study Area and surrounds are predominantly used for agriculture, with areas of conservation reserves and nature reserves, as shown on **Attachment 1, Figure 2 and Figures 15-17**.

The onshore Study Area for transmission route Option 1 intersects with industrial land use at the Portland Aluminum Smelter, and rural residential uses on the outskirts of Portland. The remainder of the land is predominantly used for agriculture public land (reserves). Cape William Grant Quarry lies approximately 6 km south of Portland adjacent to Point Danger Reserve and Narrawong Coastal Reserve and was the original source of bluestone for the main breakwater and construction of Portland harbour. It is still an active quarry today operated by Hanson. It is not anticipated that the quarry would be directly intersected by the Project, However potential to use materials from the quarry during the Project's construction will be subject to further investigation.

Option 2 traverses public land near the cable landing and transition joint bay, which is used for conservation and recreation purposes, including the Discovery Bay Coastal Park and the Glenelg Estuary and Discovery Bay Ramsar Wetlands site just north of the Discovery Bay Marine National Park. The option then traverses freehold agricultural land for most of the transmission route, except where it traverses sections of Cobboboonee Forest for approximately 7 km in the northern extent. Several other smaller parcels of public land are located within the option 2 corridor predominantly set aside for conservation purposes.

The Study Area does not contain significant urban development and has a low population density. Transmission line option 1 and 2 have been sited to avoid the urbanised areas of Portland.

Within the Study Area, there are coastal walking tracks including the popular Great South West Walk and other inland walking tracks and horse riding trails through Cobboboonee Forest Park (see **Attachment 3**, Section 1.5.1, pp.15). Several nature conservation reserves, natural features reserves, and community use areas are scattered throughout the Study Area which are used for recreational activities.

The Limestone Coast region in South Australia to the north of the offshore component of the Project is a major tourist attraction and often considered an extension of the Great Ocean Road in Victoria.

There are campsites east and west of the Study Area along the coastline including Springs Camp, Trewalla Camping Area, Swam Lake and Lake Mombeong.

The arterial roads that intersect with the onshore Study Area are Portland Nelson Road, Bridgewater Road, Henty Highway, Madeira Packet Road and Princes Highway. The Study Area also intersects with other sealed and unsealed local roads. The Portland Railway Line runs north to south within the Study Area, from Heywood down to Portland. The Portland City Gate to Portland Smelter gas pipeline owned by Ausnet Gas Services Pty Ltd intersects with the option 1 transmission line corridor.

Transmission line option 2 is located within proximity to Portland Airport, approximately 1 km at the closest point. This proposed transmission route is located within the inner horizontal surface of the Portland Aerodrome Obstacle Limitation Surface (OLS), which may infringe on acceptable clearance limits of the OLS.

The Portland Wind Energy Project (PWEP) is an existing wind project consisting of four separate sites, with a total installed capacity of 179 megawatts and is located along the coast around the Portland headland. These sites are Yambuk wind farm, Cape Bridgewater wind farm, Cape Nelson South wind farm and Cape Sir William Grant wind farm.

Proposed Onshore Uses

Kentbruck Green Energy Hub is a proposed onshore wind farm with battery storage comprising up to 118 turbines near the town of Nelson, Victoria, with a grid connection via transmission lines to the Heywood Terminal Station. It lies approximately 20 km from the Project, eastward inland of the offshore wind farm component. This Project is currently preparing an Environment Effects Statement.

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

Offshore - See **Attachment 7,** Section 5.4, pp28-59 for further information.

The Study Area includes the **Discovery Bay National Marine Park**, however the Project infrastructure has been designed to avoid directly interacting with this. The park protects reef and macroalgae habitats and supports a high diversity of marine life including whales, seabirds, fish and Australian fur seals (Parks Victoria, 2007). The aims for the marine park include protecting significant geological and seabed features, minimise the impact of threatening processes, maintain water quality and prevent pollution, protect natural habitats, ecological communities and native flora and fauna, protect seascapes and landscapes, minimise the risk of marine pests and protect indigenous places.

The Study Area also interacts with the South Australian **Lower South East Marine Park** which lies directly north of the offshore wind project component of the Project. The area nearest the Project is a sanctuary zone and habitat protection zone established to protect: the only area of sheltered fine-medium sandy beach along this part of the coastline, seabed habitats including rocky reef and soft-sediment habitat, important shorebird roosting and feeding areas, plus habitats for migratory birds, shallow macroalgae beds and intertidal rocky reef at Frenchy Point that offers diverse invertebrate habitat.

Forty six (46) EPBC listed marine species are recorded within the Study Area.

The Study Area interacts with the following marine biounits (BMT, 2022):

- **Glenelg Biounit** lies to the north and east of the proposed offshore wind project area. This is dominated by infralittoral rock (i.e. hard surfaces in the near shore zone typically supporting seaweed and kelp communities) and sublittoral sediment (i.e. areas of nearshore permanently covered by water. This is one of 12 sites worldwide for the feeding of blue whale (*Balaenoptera musculus*). It also contains extensive habitat for the hooded plover (*thinornis cucullatus*) which nests on the coastline. Nelson Reefs provide important giant kelp beds and Noble Rocks provide a rocky reef in an otherwise sandy coastline.
- **Discovery Bay Biounit** lies to the south-east of the offshore Project area and encompasses the cable landing area for Option 2. This biounit is dominated by infralittorial fine sand with some low-profile reef communities. It is one of only a few pygmy blue whale (*Balaenoptera musculus brevicauda*) feeding areas worldwide. It has recorded a high number of southern right whales and southern elephant seals. It is also an occasional breeding site for the Australian fur-seal (*Arctocephalus pusillus doriferus*), contains habitat for hooded plover on the shoreline, feeding and roosting habitat for endangered seabirds including petrels and albatross, is a nursery habitat for great white shark (*Carcharadon carcharias*) and grey nurse shark (*Carcharias taurus*) and the southern bluefin tuna (*thunnus maccoyii*), and is the most productive abalone habitat in Victoria.
- **Cape Nelson Biounit** lies in the south-eastern extent of the study area near the cable landing for Option 1. This area is characterised by high-energy, wave-dominated beaches and rocky shores, sublittoral reed and sediments, coastal cliffs and lagoons. Dominant benthic profiles are infralittoral fine sand, high energy lower infralittoral zone and high energy common kelp communities. This biounit supports an aggregation area for the southern right whale (*Eubalaena australis*), important seabird habitat including migratory shorebird breeding ground and high density of hooded plovers, rocky reefs support diverse fish, invertebrate and macroalgae communities and seagrass meadows in Portland Bay support populations of kingfish, whiting, flathead, mulloway and snapper and the rare brown algae (*Crystophora cymodocea*).

There are five shipwrecks of heritage value within the offshore Study Area (**Attachment 8**, Section 3.1.2, pp 29-31): The Triumph (ID 6654), Jane (ID 6303), Captain Cook (ID6042), Isabella (ID 6286), Merope (ID 6429) and one shipwreck located in the onshore Study Area: Unknown French Whaler (ID 6758). A permit is required to undertake activities which may impact on underwater heritage under the Commonwealth *Underwater Cultural Heritage Act 2018*.

Onshore - See **Attachment 6,** Section 4.5-4.9, pp21-32 for further information.

The onshore Study Area lies within three Bioregions - Bridgewater, Glenelg Plain and the Victorian Volcanic Plain. A total of 26 Ecological Vegetation Classes (EVCs) (see **Attachment 1, Figure 5**) across the three bioregions are modelled to occur within the Study Area and include a range of forest, woodland, wetland, and scrub communities. Most of the onshore Study Area is cleared agricultural land which holds limited ecological value. Higher quality native vegetation is likely to be present within the reserves and parks throughout the Study Area.

Several parks and reserves within the Study Area are recognised for their conservation value and are significant in terms of the diversity of flora and fauna they support.

Areas of greatest value for threatened flora species within the Study Area include:

- Bridgewater Lakes and the surrounding Discovery Bay Coastal Park vegetation, known to support populations of Coast Ballarat *Exocarpus syrticola* (FFG e), Leafy Greenhood *Pterostylis cucullata* subsp. cucullata (FFG e) and Coast Helmet Orchid *Corybas despectans* (FFG e)
- Point Danger Coastal Reserve known to support populations of Mellblom's Spider Orchid *Caladenia hastata* (EPBC EN, FFG Cr), Shiny Tea-tree *Leptospermum turbinatum* (FFG e) and Oval-leaf *Logania ovata* (FFG, e)
- Cobboboonee National Park known to support populations of Swamp Fireweed *Senecio psilocarpus* (EPBC, VU) and Western Peppermint *Eucalyptus falciformis* (FFG v).

A search of the Protected Matters Search Tool (PMST) and Victorian biodiversity databases identified 17 flora species listed under the EPBC Act. Ten of the 17 EPBC Act listed species most likely to occur are terrestrial orchids including various species of Spider Orchids, Leek-Orchids, Sun orchids and Greenhood Orchids (see **Attachment 6**, Section 4.6, pp. 21-22).

A search of the PMST and Victorian biodiversity databases identified 55 EPBC Act listed fauna species considered to have a medium or higher likelihood of occurring within the Study Area. These have been categorised into the following:

- Avifauna (terrestrial birds and shorebirds): Orange-bellied Parrot *Neophema chrysogaster* and Swift Parrot *Lathamus discolour* are known to traverse the Bass Strait when migrating from Tasmania to the mainland. White-throated Needletail *Hirundapus caudacutus* is also migratory. Shorebird hotspots include the Glenelg Estuary and Discovery Bay Ramsar Wetlands site (**Attachment 7**, Section 4.7.1, pp.26-28).
- Terrestrial and aquatic fauna: Threatened arboreal species such as Grey-headed Flying Fox *Pteropus poliocephalus* and Southern Bent-winged Bat *Miniopterus orianae bassanii* may utilise large trees and native vegetation within the onshore Study Area for roosting and foraging. Wetlands and waterways within the Study Area and surrounds are likely to provide important habitat for nationally listed amphibian and ichthyofauna populations, including Growling Grass Frog *Litoria raniformis* (**Attachment 7**, Section 4.7.2, pp.28-29).
- Marine fauna (including seabirds, marine mammals, sea fishes and marine reptiles): The marine environment off the coast of Portland is known to provide productive foraging habitats for several seabird species such as the Australasian Gannet *Morus serrator* and Short-tailed Shearwater *Ardenna tenuirostris* (**Attachment 7**, Section 4.7.3, pp.30).

The Piccanninnie Ponds Karst Ramsar Wetlands site contains one of the largest and deepest springs in Australia and is popular for diving, bushwalking and birdwatching. The site has spiritual value for the traditional owners. It supports species of conservation significance include dwarf galaxias *Galaxiella pusilla* and orange-bellied parrot *Neophema chrysogaster*, over 79 bird species (24 of which are internationally protected).

The onshore Study Area falls within the jurisdiction of one Registered Aboriginal Party (RAP), the Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC). There are many registered Aboriginal Places (Aboriginal cultural heritage sites registered on the Victorian Aboriginal Heritage Register (VAHR)) located within the Study Area including artefact scatters, earth features, shell middens, low density artefact distributions (LDADs) and object collections. There are also multiple areas of cultural heritage sensitivity within the Study Area. See **Attachment 1, Figures 18-21** and **Attachment 8** for more information, note that details of Aboriginal Places and their locations are redacted due to the cultural sensitivity of the material.

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

Offshore

The offshore Study Area is located on the southern continental shelf at the narrowing point of the Bonney Coast Upwelling where there are over 20 very large and steep canyons dominated by swells and open cool water. (**Attachment 7**, Section 5.1, pp. 15) In the nearshore, there are typically exhumed limestone and rocky substrates, whilst the middle shelf (within the Study Area) is a zone of swelling waves, characterized by mega-rippled bryozoan sands, with areas of rock.

Depth contours for the offshore Study Area range from around 60 - 90 m, and the substrate encountered is mainly sand and shell, with rock at <60 m from the shore.

Onshore

The onshore Study Area extends across the Shire of Glenelg where the topography is generally gently undulating with landscape features varying throughout the coastal edge and hinterland (see **Attachment 1, Figure 2**). Bridgewater Lakes and the surrounds is flat, whilst the Cape Bridgewater and Cape Nelson coastal landscapes contain steep cliffs and bays with sandy beaches.

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 **Preliminary Desktop Biodiversity and Constraints Assessment** (Biosis, 2022) (see **Attachment 6,** Section 4, pp 16-51) and the **Preliminary Desktop Marine Environmental Assessment** (BMT, 2022) (see **Attachment 7,** Section 5, pp 14-64), the following threatened species, migratory species and ecological communities listed under the EPBC Act are likely to occur, or have potential to occur within the Study Area:

- 17 threatened flora species
- 55 threatened fauna species, including
  - 5 terrestrial bird species
  - 9 shorebird species (5 of which are also migratory)
  - 13 other terrestrial and aquatic fauna species
  - 17 seabird species (12 of which are also migratory)
  - 46 marine fauna species (10 whales, dolphins and seals of which 9 are migratory; 3 turtles all of which are migratory; 33 sharks and fish of which 3 are migratory)
- 86 listed migratory species (total including those listed above as migratory)
- 6 threatened ecological communities

Attachment 1, Figure 6 shows threatened flora records within the Study Area. **Attachment 1, Figure 7** shows threatened fauna records within the Study Area.

Marine Fauna

Seventeen (17) seabird species listed under the EPBC Act are considered to have a medium to high likelihood of occurring within the Study Area. Four of these species are listed as endangered, with the remaining 13 species listed as vulnerable. This comprises 12 threatened Albatross species and five threatened Procellarriidae (Petrels and Shearwaters). The marine environment off Portland is known to provide productive foraging habitats for a number of seabird species. In addition to the listed threatened seabird species, additional seabirds that may warrant further attention include:

- Australasian Gannet *Morus serrator* – The species breeds has breeding colonies at Point Danger and Lawrence Rocks, both of which are located within the study area.
- Short-tailed shearwater *Ardenna tenuirostris* – The most numerically abundant seabird species in south-eastern Australia which has a breeding colony at Griffith Island in Port Fairy, approximately 50 km from the Study Area.

Given the high mobility and dispersal capabilities of seabirds, particularly outside of the breeding period, it is highly likely that range of these and other species may overlap with the offshore component of the Study Area.

Forty-six (46) marine fauna listed under the EPBC Act are likely to occur within the offshore Study Area. The offshore Study Area supports potential foraging habitat for a range of threatened/migratory marine species, including cetaceans, sharks and marine turtles. In particular, the site is a Biologically Important Areas (BIA) for the Blue Whale, Southern Right Whale and White Shark who are known to foraging and breed in this area due to the Bonney Upwelling providing a high abundance of nutrients and subsequent fish species in the area.

Migratory species

A search of the Study Area with a 10 km buffer identified 86 EPBC Act listed migratory species that are predicted to occur within the search area. Refer to **Section 4.1.5** of this referral for more information**.**

Onshore Flora

A search of the PMST and Victorian biodiversity databases identified 17 flora species listed under the EPBC Act that have a medium to high likelihood of occurring within the Study Area. Four of these species are listed as endangered, with the remaining 13 listed as vulnerable. These species and potential impacts are discussed in **Section 4.1.4** of this referral.

Ten of these listed species are terrestrial orchids including Leek-Orchids, Sun Orchids, Spider Orchids and Greenhood Orchids. Terrestrial orchids are cryptic species, emerging from the ground and flowering for only short periods of time each year. Amongst the species most likely to have the potential to occur in the Study Area are Swamp Fireweed *Senecio psilocarpus* and River Swamp Wallaby-grass *Amphibromus fluitans*, Wrinkled Cassinia and Coast Ixodia.

Onshore Fauna

Five (5) terrestrial bird species and nine (9) shorebird species listed under the EPBC Act are considered to have a medium to high likelihood of occurring within the Study Area. Five of these species are critically endangered, five are endangered, and four are vulnerable. Species of particular concern include Orange-bellied Parrot *Neophema chrysogaster*, Swift Parrot *Lathamus discolour* (both of which are critically endangered) and White throated Needletail *Hirundapus caudacutus* (vulnerable).

Thirteen (13) terrestrial and aquatic fauna species listed under the EPBC Act are considered to have a medium to high likelihood of occurring within the Study Area. One of these species is critically endangered, four are listed as endangered, with the remaining eight listed as vulnerable. These species include terrestrial ground-dwelling species, such as Southern Brown Bandicoot *Isoodon obesulus obesulus*, arboreal species such as Grey-headed Flying-fox *Pteropus poliocephalus*, and species inhabiting freshwater streams and waterbodies such as Growling Grass Frog *Litoria raniformis,* Dwarf Galaxias *Galaxiella pusilla* and Australian Grayling *Prototroctes maraena*.

Threatened ecological communities

Six ecological communities listed under the EPBC Act are likely to occur within the Study Area **(Attachment 1, Figure 8)**:

- Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community (endangered) – this encompasses 25 estuaries between the South Australian border and Wilsons Promontory in Victoria. The community is dominated by obligate estuarine species and often also supports coastal, estuarine, freshwater and brackish species. One location within the north east of the onshore Study Area on the Surry River is recorded to support this threatened ecological community.
- Giant kelp marine forests of South East Australia (endangered).
- Grassy eucalypt woodland of the Victorian Volcanic Plains (critically endangered). It is restricted to basalt soils on flat to gently undulating terrain. It is typically dominated by a River Red Gum *Eucalyptus camaldulensis* overstorey and an understorey of sparse shrubs and many species of grasses and herbs.
- Karst springs and associate alkaline fens of the Naracoote Coastal Plain bioregion (endangered). This is a groundwater dependent ecosystem that occurs in association with tertiary limestone on low lying areas of the Western Victoria and Eastern South Australia coast.
- Natural temperate grassland of the Victorian Volcanic Plain (critically endangered).

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

Onshore

A detailed vegetation quality assessment has not yet been undertaken for the Project and so the actual extent of native vegetation within the Project Area and Study Area has not been determined. However, the ecological vegetation classes (EVCs) modelled to occur within the Study Area according to DELWP's Native Vegetation – Modelled 2005 Ecological Vegetation Classes (with Bioregional Conservation Status (BCS)) dataset have been identified (see **Attachment 6,** Section 4.2, pp16-18).

The onshore Study Area lies within the Bridgewater, Glenelg Plain and Victorian Volcanic Plain Bioregions. Preliminary desktop mapping of Ecological Vegetation Classes (EVCs) identified 26 modelled EVCs, covering a range of forest, woodland, wetland and scrub communities as listed below and see **Attachment 1, Figure 5**).

A quarter of the modelled vegetation within the Study Area is EVC 858 – Coastal Alkaline scrub (25.1%) followed by EVC 16 – Lowland Forest (23.45%), EVC 23 – Herb-rich Foothill Forest (14.34%) and EVC 650 – Heathy Woodland/Damp Heathy Woodland/Damp Heathland Mosaic (11.22%). The modelled area of these four EVCs makes up 74% of modelled native vegetation extent within the Study Area.

- **EVC 03 – Damp Sands Herb-rich Woodland -** Vulnerable
- **EVC 05 – Coastal Sand Heathland -** Rare
- **EVC 06 – Sand Heathland -** Rare
- **EVC 10 – Estuarine Wetland -** Endangered
- **EVC 16 – Lowland Forest -** Least Concern
- **EVC 23 – Herb-rich Foothill Forest -** Vulnerable
- **EVC 48 – Heathy Woodland -** Least Concern
- **EVC 53 – Swamp Scrub -** Vulnerable and Endangered
- **EVC 132 – Plains Grassland -** Endangered
- **EVC 160 – Coastal Dune Scrub -** Least Concern
- **EVC 161 – Coastal Headland Scrub -** Vulnerable and Endangered
- **EVC 198 – Sedgy Riparian Woodland -** Vulnerable
- **EVC 200 – Shallow Freshwater Marsh -** Endangered
- **EVC 650 – Heathy Woodland/Damp Heathy Woodland/Damp Heathland Mosaic -** Vulnerable
- **EVC 651 – Plains Swampy Woodland -** Endangered
- **EVC 664 – Limestone Ridge Woodland -** Vulnerable
- **EVC 680 – Freshwater Meadow -** Endangered
- **EVC 681 – Deep Freshwater Marsh -** Vulnerable
- **EVC 682 – Permanent Open Freshwater -** N/A
- **EVC 684 – Permanent Saline -** N/A
- **EVC 713 – Damp Sands Herb-rich Woodland/Damp Heathland/Damp Heathy Woodland Mosaic -** Vulnerable
- **EVC 746 – Damp Heathland/Damp Heathy Woodland Mosaic -** Depleted and Vulnerable
- **EVC 762 – Damp Heathland/Sand Heathland Mosaic -** Depleted
- **EVC 797 – Coastal Landfill/Sand Accretion -** N/A
- **EVC 858 – Coastal Alkaline Scrub -** Endangered and Least Concern
- **EVC 876 – Spray-zone Coastal Shrubland -** Rare and Endangered

A review of Victorian soil type mapping (Agriculture Victoria, 2000 and 2003) indicates that the proposed transmission line routes (option 1 and 2) vary between multiple soil types. The main soil types found in the Study Area are Chromosols, Podosols and texture contrast soils with deep sandy surface horizons and other sand soils (Tenosols & Rudosols) and texture contrast soils with deep sandy surface horizons.

A review of the Victorian Coastal Acid Sulfate Soil (VCASS) maps for Gippsland indicates the coastline within the onshore Study Area has potential to contain acid sulfate soils, as this area is mapped as 'prospective', see **Attachment 1, Figure 11**. Additionally, a review of the National Australian Acid Sulfate Soils Atlas (CSIRO, 2013) indicates there is a low to extremely low probability of other Potential Acid Sulphate Soils within the Study Area. See **Attachment 1, Figure 12**.

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.

A **Preliminary Desktop Cultural Heritage Constraints Assessment** was undertaken for the Project and is provided in **Attachment 8,** Section 3, pp 12-27. See **Attachment 1, Figure 20 & 21.**

Offshore

There are five shipwrecks of heritage value within the offshore Study Area recorded within the Australasian Underwater Cultural Heritage Database (AUCHD):

- The Triumph (ID 6654),
- Jane (ID 6303),
- Captain Cook (ID6042),
- Isabella (ID 6286),
- Merope (ID 6429).

One shipwreck was recorded within the onshore Study Area: Unknown French Whaler (ID 6758).

A permit is required to undertake activities which may impact on underwater heritage under the Commonwealth *Underwater Cultural Heritage Act 2018*.

Onshore

A search of the Australian Heritage Database (AHD) confirmed there are no non-Aboriginal cultural heritage values listed on the World Heritage List, National Heritage List, or Commonwealth Heritage List located within the Study Area.

A search of the Victorian Heritage Database (VHD) confirmed multiple non-Aboriginal cultural heritage values within the Study Area listed on the the Victorian Heritage Inventory (VHI), and the Glenelg Planning Scheme Heritage Overlay (HO), and the non-statutory National Trust Heritage Register (Victoria). These heritage listings predominantly concern historic buildings but also include historic military assets, Wattle Hill Methodist Chapel, Kittson and South Portland Cemeteries, Bridgewater Lakes, Portland heritage precinct, Johnstone River and Swan Lake.

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

A **Preliminary Desktop Cultural Heritage Constraints Assessment** was undertaken for the Project and is provided in **Attachment 8** Section 3, pp 12-27. See **Attachment 1, Figure 18.** Details of Aboriginal Places and their locations within the Study Area have been redacted from the Attachment 9 report and associated figures, and **Attachment 1**, **Figure 18** due to cultural sensitivity reasons.

Offshore (and Coastal)

The Traditional Owners of the Study Area are the Gunditjmara people, who have lived in the Portland area since time immemorial. Western science has dated continuous Aboriginal occupation of the area for at least the past 36,000 years (Williams et al. 2018) and therefore we must also understand how this environment has changed throughout time to accurately determine areas of cultural significance. During the Last Glacial Maximum (LGM, colloquially known as the Ice Age) approximately 25,000 years ago, coastlines were on average 125 m lower than the present day (Williams et al. 2018). Therefore, the cultural significance of coastlines extends into the waters of Discovery Bay along previous coastlines where archaeological material may be present. There is subsequently a high likelihood that there is undiscovered and unrecorded archaeological remains on the ocean floor within the Study Area.

The Budj Bim landscape is sacred to the Gundjitmara Peoples and was listed as a World Heritage Site in 2019. Tyrendarra ('where the rivers meet') is the southern component of the Budj Bim Cultural Landscape, located 6 km east of the northern portion of the Study Area. Budj Bim is home to the remains of Gundjitmara aquaculture systems used to channel water and farm eels, and permanent settlements with circular stone dwellings (Parks Victoria 2015). These remains dispel pervasive myths that Aboriginal people were nomadic hunter gatherers. Traces of shell midden sites, stone tools, scar trees, camp ovens and rock shelters and other special places can also be seen in the area (Parks Victoria 2015).

The landscape has outstanding heritage value in both tangible and intangible values and is of incredible cultural and spiritual significance to Gunditjmara people. The spirits of Gunditjmara ancestors cross the sea to Deen Maar (Lady Julia Percy Island), 8km off the coast to the east of Portland (Parks Victoria 2015). When a Gundjitmara person dies, they are buried in grass bundles with their head in the direction of the island (Mathews 1904).

Onshore

There are no National Heritage places of Aboriginal heritage value located in the Study Area for this Project.

Many registered Aboriginal Places (Aboriginal cultural heritage sites registered on the Victorian Aboriginal Heritage Register (VAHR)) are located within the Study Area (see **Attachment 1, Figure 18** - this has been redacted for the public version due to cultural sensitivity). The types of sites include artefact scatters, earth features, shell middens, low density artefact distributions (LDADs), and object collections. Further information is provided in **Attachment 8**, however a redacted version without cultural heritage site details will be made publicly available for sensitivity reasons.

There are also multiple areas of cultural heritage sensitivity (CHS) within the Study Area. As per criteria set out in Division 3 the Regulations, areas of CHS within the Study Area includes:

- The registered Aboriginal Places plus land within 50 m of them (Reg 25).

- Several named waterways including Bridgewater Lakes, Knights Swamp, Wattle Hill Creek, Wild Dog Creek, Surry River, and Fawthrop Lagoon plus land within 200 m of them (Reg 26).
- The Glenelg Estuary and Discovery Bay Ramsar wetlands (declared Ramsar wetlands) plus land within 200 m of it (Reg 29).
- Land within 200 m of the high-water mark of the coastal waters (coastal land) (Reg 31).
- The Discovery Bay Coastal Park, Tarragal Education Area and Mount Richmond National Park (parks) (Reg 32).
- The Koo Wee Rup Plain, as identified in the Surface Geology of Victoria 1:250 000 map book by unit code “Qm1” (Reg 34).
- Volcanic cones of western Victoria, as identified in the Surface Geology of Victoria 1:250 000 map book by unit code “Ne” and “Nes” (Reg 37).
- Coastal dune deposits, as identified in the Surface Geology of Victoria 1:250 000 map book by unit code “Qdl1” (dunes) (Reg 40).
- The Bridgewater Formation sand sheet, as identified in the Surface Geology of Victoria 1:250 000 map book by unit code “Qxr” (sand sheets) (Reg 41).

It is highly likely that non-registered Aboriginal cultural heritage material exists within the Study Area, within areas of CHS, including near water sources, areas of remnant vegetation, coastal areas, and wetlands. It is likely that non-registered Aboriginal sites will include surface and sub-surface stone artefact scatters, camping and occupation sites and Aboriginal ancestral remains.

To note, in addition to working with the Gunditjmara peoples for the production of a Cultural Heritage Management Plan for the Project, although the Project is not located within South Australia (either onshore or offshore), Traditional Owners of South Australian land within proximity to the Study Area will also be consulted. These Traditional Owners are the South East Aboriginal Focus Group, who are represented in business matters by the Burrandies Aboriginal Corporation through the Lartara-Wirkeri Cultural Governance Agreement.

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. *

A **Preliminary Desktop Hydrology Constraints Assessment** was undertaken for the Project and is provided in **Attachment 9,** Section 2.0, pp 5-11. See **Attachment 1, Figure 10.**

Onshore

The onshore Study Area is located within the broader Portland Coast catchment system, with the northern part of the onshore Study Area located in the catchment system for Surry River and generally drains towards the north-east, discharging at Narrawong. The southern part of the onshore Study Area lies in the catchment for Wattle Hill Creek and drains generally towards the south-east, discharging at Portland. The Glenelg Estuary and Discovery Bay Ramsar Wetlands site is located within the Study Area.

Both overhead transmission line route options will traverse the watercourses of Wattle Hill Creek and Surry River and their tributaries, and interact with low, moderate and high potential Groundwater Dependent Ecosystems (BOM, 2017).

A review of existing flood studies in the region was undertaken and determined that it is expected that Surry River has the potential to spread out into a floodplain approximately 1 km wide, while it is expected that flow within the Wattle Hill Creek and other tributaries to be relatively contained within localised riparian corridors along the channel alignments. A Project-specific flood model of the Study Area is recommended for completion in the next Project phase to determine the potential impacts of the Project on the hydrology and hydraulics of the local catchment and identify any flood risks to be accounted for the Project design and siting.

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	Yes	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

EPBC Act section	Controlling provision	Impacted	Reviewed
S26	Commonwealth Land	No	Yes
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 Study Area or within proximity to the Study Area that could be subject to indirect impacts.

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.

—

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 places within the Project Area. The proposed action will not impact any places listed for National Heritage.

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.

Direct impact	Indirect impact	Ramsar wetland
No	Yes	Glenelg Estuary and Discovery Bay Wetlands
No	Yes	Piccaninnie Ponds Karst Wetlands

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

Yes

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

Two Ramsar wetland sites are located within the Study Area of the Project and surrounds (up to 10 kms), see **Attachment 1, Figure 9**:

- **Glenelg Estuary and Discovery Bay Ramsar Wetlands** is located adjacent to the Project Area however the Project has been designed so all infrastructure avoids direct contact with this Ramsar site. Indirect impacts from works in proximity may result, as discussed below.
- **The Piccanninnie Ponds Karst Ramsar Wetlands** is located approximately 8 km north of the proposed wind turbines in the offshore Project Area. Indirect impacts from works in proximity may result, as discussed below.

No Project infrastructure is proposed to be located within either of the Ramsar sites.

There is potential that the proposed action will indirectly impact the ecological values of the abovementioned Ramsar sites. Specifically, this relates to the potential for indirect impacts including:

- Construction noise, vibration and lighting disturbance to wetland residents, particularly avifauna, including listed threatened and migratory species that utilise these systems and may traverse both the onshore transmission route, cable area, and offshore wind turbine area
- Potential for turbine collision of Ramsar avifauna when flying over the offshore Project Area
- Potential altering of the water quality in the Ramsar if upstream construction works creates sedimentation or introduces contaminants which would impact listed species habitat.

See **Attachment 6** Preliminary Desktop Biodiversity Constraints Assessment for more information.

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

Yes

4.1.3.5 Describe why you consider this to be a Significant Impact. *

The Project has potential to significantly impact on the Glenelg Estuary and Discovery Bay Ramsar Wetlands site through indirectly impacting on the lifecycles and potentially the survival of native species inhabiting the wetland (including migratory species). This may occur through construction disturbance from adjacent / nearby works, however direct impacts such as from habitat loss are not anticipated as this has been avoided through siting and design of the Project.

Significant impacts to the Piccanninnie Ponds Karst Wetlands site are not expected due to their distance from the Project Area, however they cannot be dismissed at this time until further assessment is completed.

There is also the potential for indirect impacts to occur through the introduction of pollutants, nutrients, disease, and invasive species.

Further assessment and field investigations will be undertaken to determine the potential for significant impacts to occur. However, in the absence of detailed assessments a precautionary approach has been applied where it has been assumed the potential impacts on these Ramsar wetlands are significant.

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

Yes

4.1.3.8 Please elaborate why you think your proposed action is a controlled action. *

Refer to **Section 4.1.3.5** as to why the proposed action is considered likely to have a significant impact and therefore be deemed a controlled action.

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

Standard legislative and industry control measures would be implemented as required however, additional measures would include, but not be limited to:

- Prevent unplanned incidents, such as substantial oil or chemical spills by developing a comprehensive Construction Environmental Management Plan (CEMP), training staff appropriately in chemical and fuel handling and storage, providing appropriately bunded and locked storage areas, providing spill response training and kits.
- Producing a detailed erosion and sediment control plan for each area of construction works but particularly focused on the cable landing at the shoreline and any works near waterbodies.
- Consider alternative construction methods (e.g. boring) to reduce environmental impact at waterway crossings or works near wetlands / the coast.
- Apply vessel washing procedures to avoid introducing an invasive marine species into the Project Area
- CEMP to include appropriate construction mitigation measures to reduce noise and light spill from works areas, construction methods near sensitive habitats (such as near the Glenelg Estuary and Discover Bay Ramsar Wetlands site) to consider noise and vibration reduction, directional lighting and potential for restricted working hours or seasons on highly disruptive activities e.g. piling.
- Careful timing of activities around periods or areas of ecological significance (e.g. breeding sites and breeding seasons) to further minimise and/or avoid impacts.
- Utilise seasonal construction windows (this would vary dependent on species)
- Undertake hull inspections of vessels used for construction and operation, and source local vessels where practicable
- Implement standard ballast water management procedures and adhere to biofouling legislative requirements
- Adhere to industry standard chemical storage, handling, and maintenance procedures
- Minimise lighting where possible, avoid lighting the water surface and use lights that appear red to the eye
- Adhere to relevant water quality guidelines
- Compliance with maritime legislation for discharges to the marine environment
- Develop a spill response plan
- Standard hazardous material storage and management in accordance with best practice and associated maritime legislation

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

No offsets are proposed in relation to the above mitigation measures and since there is no proposed direct impact to either the Glenelg Estuary and Discovery Bay Ramsar Wetlands or the Piccaninnie Ponds Karst Ramsar Wetland sites.

The Preliminary Desktop Marine Environmental Assessment (BMT, 2022) is provided in **Attachment 7,** Section 6, pp 65-69 and the Preliminary Desktop Biodiversity Constraints Assessment (Biosis, 2022) is provided in **Attachment 6,** Section 5, pp52-58 which provide further information about the mitigation measures proposed for the Project.

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	Yes	Amphibromus fluitans
Yes	Yes	Antechinus minimus maritimus
No	Yes	Balaenoptera borealis
Yes	Yes	Balaenoptera musculus
No	Yes	Balaenoptera physalus
Yes	Yes	Botaurus poiciloptilus
Yes	Yes	Caladenia hastata
Yes	Yes	Caladenia ornata
Yes	Yes	Calidris canutus
Yes	Yes	Calidris ferruginea

Direct impact	Indirect impact	Species
No	Yes	Callocephalon fimbriatum
No	Yes	Calyptorhynchus banksii graptogyne
Yes	Yes	Carcharodon carcharias
Yes	Yes	Caretta caretta
Yes	Yes	Cassinia rugata
Yes	Yes	Charadrius leschenaultii
Yes	Yes	Chelonia mydas
Yes	Yes	Dasyurus maculatus maculatus (SE mainland population)
Yes	Yes	Dermochelys coriacea
Yes	Yes	Diomedea antipodensis
Yes	Yes	Diomedea epomophora
Yes	Yes	Diomedea exulans
Yes	Yes	Diomedea sanfordi
Yes	Yes	Euastacus bispinosus
Yes	Yes	Eubalaena australis
Yes	Yes	Falco hypoleucos
No	Yes	Galaxiella pusilla
Yes	Yes	Galeorhinus galeus
Yes	Yes	Glycine latrobeana
Yes	Yes	Grantiella picta
Yes	Yes	Halobaena caerulea
Yes	Yes	Hirundapus caudacutus
Yes	Yes	Isoodon obesulus obesulus
Yes	Yes	Ixodia achillaeoides subsp. arenicola
Yes	Yes	Lathamus discolor
Yes	Yes	Lepidium aschersonii
Yes	Yes	Lepidium hyssopifolium
Yes	Yes	Limosa lapponica baueri
Yes	Yes	Litoria raniformis
Yes	Yes	Macronectes giganteus
Yes	Yes	Macronectes halli
Yes	Yes	Miniopterus orianae bassanii
No	Yes	Nannoperca obscura
Yes	Yes	Neophema chrysogaster
No	Yes	Neophoca cinerea
Yes	Yes	Numenius madagascariensis
Yes	Yes	Pachyptila turtur subantarctica
Yes	Yes	Pedionomus torquatus
Yes	Yes	Petaurus australis australis

Direct impact	Indirect impact	Species
Yes	Yes	Phoebetria fusca
Yes	Yes	Potorous tridactylus trisulcatus
Yes	Yes	Prasophyllum litorale
Yes	Yes	Prasophyllum spicatum
No	Yes	Prototroctes maraena
Yes	Yes	Pseudomys fumeus
Yes	Yes	Pseudomys shortridgei
Yes	Yes	Pterodroma leucoptera leucoptera
Yes	Yes	Pterodroma mollis
Yes	Yes	Pteropus poliocephalus
Yes	Yes	Pterostylis chlorogramma
Yes	Yes	Pterostylis cucullata
Yes	Yes	Rostratula australis
Yes	Yes	Senecio psilocarpus
Yes	Yes	Seriolella brama
Yes	Yes	Sternula nereis nereis
Yes	Yes	Thalassarche bulleri
Yes	Yes	Thalassarche bulleri platei
Yes	Yes	Thalassarche carteri
Yes	Yes	Thalassarche cauta
Yes	Yes	Thalassarche chrysostoma
Yes	Yes	Thalassarche impavida
Yes	Yes	Thalassarche melanophris
Yes	Yes	Thalassarche salvini
Yes	Yes	Thalassarche steadi
Yes	Yes	Thelymitra epipactoides
Yes	Yes	Thelymitra matthewsii
Yes	Yes	Thinornis cucullatus cucullatus
Yes	Yes	Thunnus maccoyii
Yes	Yes	Xerochrysum palustre

Ecological communities

Direct impact	Indirect impact	Ecological community
Yes	Yes	Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community
Yes	Yes	Giant Kelp Marine Forests of South East Australia
Yes	Yes	Grassy Eucalypt Woodland of the Victorian Volcanic Plain
Yes	Yes	Karst springs and associated alkaline fens of the Naracoorte Coastal Plain Bioregion
Yes	Yes	Natural Temperate Grassland of the Victorian Volcanic Plain
Yes	Yes	Subtropical and Temperate Coastal Saltmarsh

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. *

Attachment 6, Section 5, pp 52-58 Preliminary Desktop Biodiversity Constraints Assessment (Biosis, 2022)

Attachment 7, Section 6, pp 65-69 Preliminary Desktop Marine Environmental Assessment (BMT, 2022)

Offshore

Threatened Seabird Species

Seabirds are of particular concern with regard to collision risk with wind turbines. The marine environment off Portland is known to provide productive foraging habitats for a number of seabird species. Given the high mobility and dispersal capabilities of seabirds, particularly outside of the breeding period, it is highly likely that range of these and other species may overlap with the offshore component of the proposed study area. However, given that the at-sea distribution of these species is still relatively poorly understood, it is possible that large numbers of individuals may occur within the offshore Study Area and be at risk of collision with wind turbines.

Threatened Marine Fauna

The Study Area is within a Biologically Important Area (BIA) for the following EPBC Act species:

- Whales: foraging habitat and high use area for pygmy blue whale (*Balaenoptera musculus brevicauda*), aggregation, migration and resting areas for Southern Right Whale (*Eubalaena australis*)
- Seabirds (foraging only): wandering albatross (*Diomedea exulans*), Buller's albatross (*Thalassarche bulleri*), Indian yellow-nosed albatross (*Thalassarche chlorohynchos bassi*), black-browed albatross (*Thalassarche melanophris*) and Campbell albatross (*Thalassarche melanophris impavida*).
- Sharks: foraging area for the white shark (*Carcharodon carcharias*).

The southern right whale (*Eubalaena australis*), listed as Endangered under the EPBC Act, migrates between summer feeding areas in the Southern Ocean to inshore coastal waters off Australia. The western coastal areas of Victoria are classified as a large established aggregation area where calving occurs for the Southern Right Whale *Eubalaena australis* (DSEWPC, 2012). The area around Portland is established as a BIA for these whales. The Portland area is important for breeding females as identified in Stamation et al 2020.

Pygmy blue whales (*Balaenoptera musculus brevicauda*), a sub species of the blue whale, are regularly present in the Bonney Coast Upwelling between December and April/May, and their presence has been linked to surface swarms of coastal krill (i.e. (*Nyctiphanes australis*) that form in response to the upwelling of nutrient rich, cool water (CSIRO, 2004). The Project Area is recognised as one of 12 locations in the world where this species is regularly observed in high numbers. To the west of Portland, where the upwelling surfaces, the whales often aggregate in a relatively narrow band around a mean depth of 86 m.

Noise interference (loud noises or long exposure) is cited in the Blue Whale Conservation Plan (Australian Government, 2015) as being a potential threat to the species, causing avoidance behaviour. Potential forms of noise interference include seismic and drilling operations, some types of dredging, infrastructure construction and operation, vessel noise and low flying planes. Underwater noise from the Project (construction and operation) could therefore lead to avoidance behaviour for several whale species, which may reduce the area of occupancy available to a population. Further investigation is required to understand the potential for underwater noise to be generated during construction or operation and the potential for significant impacts on Blue Whales *Balaenoptera musculus* and Southern Right Whales *Eubalaena australis*, however there is potential for significant impacts to occur.

Loggerhead Turtles *Caretta caretta* and Leatherback Turtles *Dermochelys coriacea* may occasionally forage within the Study Area, however there are no nesting areas within the vicinity or habitat that is likely to attract turtles. Foraging activity could potentially be interrupted by underwater noise, however it is considered unlikely that the Project would significantly impact on these species. The Study Area is also not likely to support an important population of Green Turtles *Chelonia mydas* as they nest, forage, and migrate in northern Australian and occasionally stray into temperate waters. The Project would not significantly impact on Green Turtles *Chelonia mydas*.

The Study Area is mapped as a BIA for the White Shark *Carcharodon carcharias* as a foraging area. The Project has potential to significantly impact on this species though underwater noise or loss of foraging habitat, however further investigation is required to determine if the Study Area would support foraging habitat that is critical to the survival of this species.

The Study Area may be utilised by long-nosed fur-seal *Arctocephalus forsteri*, Australian fur seal *Arctocephalus pusillus*, Sei Whales *Balaenoptera borealis*, Fin Whales *Balaenoptera physalus*, Pygmy Right Whale *Caperea marginate*, Humpback Whale *Megaptera novaeangliae*, Killer Whale *Orcinus orca*, Australian Sea Lion *Neophoca cinerea*, Dusky Dolphin *Lagenorhynchus obscurus* and Sperm Whale *Physeter macrocephalus* however, is not identified as a BIA or an area that would support an important population for these species. The Project would therefore not significantly impact on these species.

Australian Grayling *Prototroctes maraena*, Yarra Pygmy Perch *Nannoperca obscuras* and Eastern Dwarf Galaxias *Galaxiella pusillam* are largely freshwater species, and whilst having a marine component of their life cycle are unlikely to travel out to the offshore Study Area. Therefore, the Project is not anticipated to have a significant impact on this species.

Impacts to shorebirds, wetland birds and terns have potential to occur if construction of onshore transmission infrastructure impacts on the integrity of surrounding wetlands and waterways which provide critical habitat for a number of these species. Onshore cable routing may also pose a threat to shorebird species that are known to occur along the coastal regions of the Study Area. Particular shorebird hotspots within proximity to the Study Area include the Glenelg Estuary and Discovery Bay Ramsar Wetlands site, the Discovery Bay Marine National Park and the Piccanninnie Ponds Karst Ramsar Wetlands site, which are globally recognised as an important habitat for resident and migratory shorebirds.

Threatened and migratory shorebirds may also be impacted during operation of the Project. Migratory shorebirds may be at risk of collision with wind turbines, especially during their departure and arrival. The offshore location of wind turbines may place them well beyond the departure and arrival ranges of migratory shorebirds however, it is likely that the offshore area will be well beyond the range of these species. It is unlikely the Project would result in significant impacts on these species, however, given the mobility of these species and the relatively poor understanding of migration routes and flight heights, potential impacts on migratory shorebirds will require further consideration during the detailed design and assessment stage of the Project.

Onshore

Threatened Terrestrial Bird Species

Impacts to terrestrial birds are likely to arise during the construction stage, particularly if the construction of transmission line infrastructure results in the disturbance of, or the removal of suitable habitat such as native vegetation. Threatened terrestrial birds in the Study Area occupy a range of habitat types, and careful consideration should be given to the impacts on individual species, associated with habitat loss. The Project would seek to avoid areas of suitable habitat for terrestrial bird species. It is not anticipated that the Project will have a significant impact on Red-tailed Black-Cockatoo (south-eastern) (*Calyptorhynchus banksia graptogyne)* or Gang-gang Cockatoo *(Callocephalon fimbriatum)*.

The positioning of offshore wind turbines places them well outside of the flight range of many terrestrial birds and as such collision risks during operation may be considered negligible for most of these species. However, there is a concern for terrestrial birds which are known to traverse the Bass Strait in large numbers at certain times of the year when moving between Tasmania and mainland Australia. Species of particular concern include Orange-bellied Parrot (*Neophema chrysogaster)*, Swift Parrot (*Lathamus discolour)* and White-throated Needletail (*Hirundapus caudacutus)*. Although, rough timelines for arrival and departure have been documented, there is still a lack of information on the migratory routes taken across the marine environment, as well as the flight heights during these large-scale movements. Population numbers are extremely low for Orange-bellied Parrot, and therefore any impact to the population (such as additional mortality) would be considered significant.

Impacts to onshore Threatened Shorebird, Wetland Bird and Tern Species, Threatened Flora Species, Threatened Terrestrial and Aquatic Fauna Species and Threatened ecological communities are detailed in the attached document **'Attachment 10 Section 4.1.4.2 Impact details (Threatened Species and Ecological Communities)**).

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

Yes

4.1.4.5 Describe why you consider this to be a Significant Impact. *

There is potential for the Project to result in significant impacts on:

- All 17 threatened seabird species identified
- 3 threatened marine fauna species (Blue Whale, Southern Right Whale and White Shark)
- 3 threatened terrestrial bird species (Orange-bellied Parrot, Swift Parrot and White-throated Needletail)
- All 17 threatened flora species identified
- 6 threatened terrestrial fauna species (Spot-tailed Quoll, Heath Mouse, Southern Brown Bandicoot, Southern Bent-winged Bat, Glenelg Spiny Crayfish and Grey-headed Flying-fox)
- 2 Critically endangered threatened ecological communities

Offshore (inclusive of all birds)

The main potential impact of concern for threatened bird species is the collision with the offshore wind turbines. Several species of threatened seabirds and some terrestrial Bass Strait migrant species are expected to occur within the offshore Study Area. The offshore Study Area is also mapped as a BIA for several albatross species.

Seabirds are known to feed on fish, cephalopod and/or crustaceans within the marine environment, diving to the surface water level or just below which can make them vulnerable to turbine strike. Large pelagic seabirds are most at risk from turbine strike as they which feed in offshore waters and are slow fliers, which means they may be unable to evade the moving rotors. If feeding offshore, they would potentially be within the range for death or damage for turbine strike. There is also a concern for Orange-bellied Parrot *Neophema chrysogaster*, Swift Parrot *Lathamus discolour* and White-throated Needletail *Hirundapus caudacutus* which are known to traverse Bass Strait in large numbers at certain times of the year when moving between Tasmania and mainland Australia. Should they pass through the offshore Study Area, there is potential for significant impact on these species through mortality and a decrease in population size.

The potential for individuals of these threatened bird species to strike turbines is considered a significant impact, as increased mortality could lead to a decrease in the size of population. The offshore wind turbines have potential to modify, destroy, remove, or isolate the availability of quality habitat by creating a barrier for these bird species to pass through. It is therefore considered likely that the Project has potential to significantly impact on several threatened bird species. The potential for significant impact on terrestrial mammals is also considered likely to occur, primarily through modification, destruction, removal, isolation, or a decrease in the availability of quality habitat for these species, as well as the potential to fragment existing populations.

The Project has potential to significantly impact on Blue Whale *Balaenoptera musculus*, Southern Right Whale *Eubalaena australis*, and White Shark *Carcharodon carcharias* species as the Study Area is mapped as a BIA for these species, as well as providing foraging, resting, breeding and migration habitat. The main potential impact would be associated with construction works, including pile driving and underwater noise and vibration, as well potential operational noise. This has potential to significantly impact these species through adversely affecting critical habitat for these species, and potentially modifying or decreasing the availability of quality habitat.

Onshore

Threatened flora species and threatened ecological communities have potential to occur within the coastline and shoreline area of the Study Area, making them susceptible to direct impacts from construction of the Project. The Project is considered likely to have a significant impact on EPBC Act listed threatened flora species, as there is potential to reduce the area of occupancy of these species, adversely affect habitat that is critical to the survival of a species, and modify, destroy, remove, isolate, or decrease the availability of quality habitat. However, the degree of impact will be determined following field investigations. In general, the potential for significantly impacting threatened flora can be reduced through a combination of detailed assessment and subsequent design response, as well as mitigation controls during construction. Consideration will need to be given to potential habitat for threatened flora species at the detailed design and assessment phase for all works associated with the Project.

Further assessment and field investigations will be undertaken to determine the presence and utilisation of the Study Area by threatened species and the potential for significant impacts to occur. However, in the absence of detailed assessments a precautionary approach has been applied where it has been assumed the potential impacts on these species are significant.

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

Yes

4.1.4.8 Please elaborate why you think your proposed action is a controlled action. *

Refer to **Section 4.1.4.5** as to why the proposed action is considered likely to have a significant impact and therefore be deemed 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. *

Through the completion of desktop assessments and proposed field studies to ground-truth the presence of these species, the Project design will be reviewed to consider any further opportunity to avoid direct impacts to threatened species or communities. Where possible infrastructure has currently been located on previously cleared land (onshore) to limit ecological effects. Targeted surveys for threatened species and communities will further inform this. Consideration of varying construction methods will also be ongoing through the design phase and where possible, options that limit impacts to threatened species and communities will be prioritised, such as trenchless cable burying and shore-crossing.

Options to further reduce the potential for bird collision with wind turbines is still a subject of ongoing study and will be considered further. The larger turbine height and blade diameter are believed to help reduce collision risk by providing a greater clearance area beneath the blades.

The following preliminary mitigation measures have been developed to avoid and minimise potential impacts on listed migratory species:

- Apply the principles of avoid, minimise, and offset to reduce vegetation clearance where possible. This may include further micro-siting of infrastructure at detailed design/construction phase. Vegetation and trees to be retained to be clearly marked as No-Go areas with appropriate root protection zones indicated on work plans.
- Production of a CEMP to manage noise, vibration, and light spill from works areas which could disturb threatened species
- Undertake works in sensitive environments such as waterways or threatened species habitat outside of breeding seasons or other ecological sensitive periods (species dependent)
- Appropriate fencing and covering of trenches or pits during construction work to avoid entrapment of fauna
- Protection of works near waterways and coastal waters through appropriate application of erosion and sediment control measures
- Aligning the impact footprint through existing cleared land including agricultural land and plantations to avoid potential habitat
- Where practical, strategic use of horizontal directional drilling (HDD) / boring rather than open trenching methods for underground cables, particularly in sensitive areas such as beach landings and when crossing waterways.
- Further assessment to identify which avifauna species are likely to be at risk of collisions with wind turbines, to allow further exploration of mitigation options and design reconfiguration.
- Development of a project specific Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan (OEMP) to include erosion and sediment control procedures and spill response procedures (onshore and offshore).
- Undertake further assessments and field surveys, including potential targeted surveys, to inform the general Project Area and recommend design refinement where possible to further avoid and minimise impacts.
- Implement soft start procedures
- Use safety zones/lookout, go-slow procedures for vessels and trained spotters for marine fauna for high-risk activities
- Implement standard ballast water management procedures and adhere to biofouling legislative requirements
- Adhere to industry standard chemical storage, handling, and maintenance procedures
- Bury the subsea cabling at a sufficient depth to minimise any negative electromagnetic effects
- Adhere to relevant water quality guidelines
- Compliance with maritime legislation for discharges to the marine environment
- Standard hazardous material storage and management in accordance with best practice and associated maritime legislation
- Recovery of dropped object/waste where possible

Other potential mitigation measure opportunities will be explored and identified during further environmental investigations to be undertaken for the Project.

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

No offsets are currently proposed in relation to the above mitigation measures and potential impacts, however once detailed assessments and field surveys are completed, offset requirements will be confirmed for the project.

The Preliminary Desktop Marine Environmental Assessment (BMT, 2022) is provided in **Attachment 7,** Section 6, pp 65-69 and the Preliminary Desktop Biodiversity Constraints Assessment (Biosis, 2022) is provided in **Attachment 6,** Section 5, pp 52-58 which provides further information on the mitigation measures proposed for the Project.

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	Yes	Actitis hypoleucos
Yes	Yes	Apus pacificus
Yes	Yes	Ardenna carneipes
Yes	Yes	Ardenna grisea
Yes	Yes	Arenaria interpres
Yes	Yes	Balaenoptera borealis
Yes	Yes	Balaenoptera musculus
Yes	Yes	Balaenoptera physalus
Yes	Yes	Calidris acuminata
Yes	Yes	Calidris alba
Yes	Yes	Calidris canutus
Yes	Yes	Calidris ferruginea
Yes	Yes	Calidris melanotos
Yes	Yes	Calidris ruficollis
Yes	Yes	Caperea marginata
Yes	Yes	Carcharodon carcharias
Yes	Yes	Caretta caretta
Yes	Yes	Charadrius bicinctus
Yes	Yes	Charadrius leschenaultii
Yes	Yes	Chelonia mydas
Yes	Yes	Dermochelys coriacea
Yes	Yes	Diomedea antipodensis
Yes	Yes	Diomedea epomophora
Yes	Yes	Diomedea exulans
Yes	Yes	Diomedea sanfordi
Yes	Yes	Eubalaena australis
Yes	Yes	Gallinago hardwickii
Yes	Yes	Hirundapus caudacutus
Yes	Yes	Lagenorhynchus obscurus
Yes	Yes	Lamna nasus
Yes	Yes	Limosa lapponica
Yes	Yes	Macronectes giganteus
Yes	Yes	Macronectes halli
Yes	Yes	Megaptera novaeangliae
Yes	Yes	Motacilla flava

Direct impact	Indirect impact	Species
Yes	Yes	Myiagra cyanoleuca
Yes	Yes	Numenius madagascariensis
Yes	Yes	Orcinus orca
Yes	Yes	Pandion haliaetus
Yes	Yes	Phoebetria fusca
Yes	Yes	Rhipidura rufifrons
Yes	Yes	Sternula albifrons
Yes	Yes	Thalassarche bulleri
Yes	Yes	Thalassarche carteri
Yes	Yes	Thalassarche cauta
Yes	Yes	Thalassarche chrysostoma
Yes	Yes	Thalassarche impavida
Yes	Yes	Thalassarche melanophris
Yes	Yes	Thalassarche salvini
Yes	Yes	Thalassarche steadi
Yes	Yes	Tringa nebularia
Yes	Yes	Tringa stagnatilis

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. *

A search of the PMST indicates that 84 migratory species listed under the EPBC Act have potential to occur within 10 km of the Study Area, including:

- Eight (8) terrestrial birds: the following three of which are known to migrate across the Bass Strait including the White-throated Needletail *Hirundapus caudacutus*, Fork-tailed Swift *Apus pacificus* and Satin Flycatcher *Myiagra cyanoleuca* (these three species are referred to as the Bass Strait migrants).
- Thirty two (32) shorebirds, wetland birds and terns which utilize a variety of freshwater aquatic, coastal and offshore habitats.
- Forty four (44) marine species (including 27 seabirds and 17 marine fauna) which typically travel extensive distances such as albatross, marine mammals, sharks and sea turtles.

Refer to the Preliminary Desktop Marine Environmental Assessment (BMT, 2022) is provided in **Attachment 7,** Table 5.1, pp 31 and the Preliminary Desktop Biodiversity Constraints Assessment (Biosis, 2022) is provided in **Attachment 6,** Appendix 1 and Appendix 2, pp64-162 for a full list of species.

Construction and operation of the Project including wind turbines, substations and cabling have the potential to result in the following direct and indirect impacts on migratory species:

- Direct impact through collision with wind turbines
- Direct impact through habitat loss or disturbance during construction of the substructure foundations, this may include direct vegetation/benthic habitat clearance or obstruction of habitat through presence of new structures
- Direct impact through disturbance of migratory species such as through underwater noise, vibration or light from construction piling, dredging, trenching or other underwater activities
- Direct impact from operational turbine or substation noise and vibration
- Direct impact from vessel strike with a migratory species
- Direct impact from habitat loss onshore through vegetation clearance along transmission route, for migratory shorebird species that seasonally nest or forage onshore
- Indirect impact from potential altering of water quality in nearby Ramsar sites if construction works creates sedimentation or introduces contaminants which would impact listed migratory shorebird, wetland, and tern bird species habitat
- Indirect impact from introduction of marine pests or pollution of marine waters from Project construction or operation vessels
- Indirect impact from electromagnetic field from the inter-array and export cables
- Indirect disturbance and deterrence from using the Project Area due to increased frequency of vessels and permanent structures in place

Migratory Seabirds

Several species of migratory seabirds are expected to occur within the offshore Study Area, including 14 species of albatross, six species of Petrel and three species of Shearwater. This includes Short-tailed Shearwater, the most numerically abundant seabird in south-eastern Australia. The offshore Study Area is mapped as a BIA for the Black-browed Albatross *Thalassarche melanophris*, Bullers Albatross *Thalassarche bulleri*, Campbell Albatross *Thalassarche impavida*, Indian Yellow-nose Albatross *Thalassarche carteri,* Shy Albatross *Thalassarche cauta*, Wandering Albatross *Diomedea chionoptera,* and Antipodean Albatross *Diomedea antipodensis,* Wedge-tailed Shearwater *Ardenna pacifica,* Common diving-petrel *Pelecanoides urinatrix.* Seabirds are known to feed on fish, cephalopod and/or crustaceans within the marine environment, diving to the surface water level or just below which can make them vulnerable to turbine strike.

The main potential impact of concern for migratory seabirds is the collision with wind turbines. Therefore, the Project has potential to have a significant impact on migratory seabird species. Further assessment is required to determine the utilisation of the Study Area by seabird species and the potential for significant impacts to occur.

Migratory Marine Fauna

A total of seventeen migratory marine fauna species have potential to occur within the offshore Study Area, including nine whale and dolphin species, three turtle species and three shark and fish species. The offshore Study Area supports potential foraging habitat for a range of migratory marine species, including cetaceans (whales/dolphin species), pinnipeds, sharks, and marine turtles. In particular, the offshore Study Area is mapped as a BIA for the Pygmy Blue Whale *Balaenoptera musculus brevicauda*, Southern Right Whale *Eubalaena australis*, and White Shark *Carcharodon carcharias*.

The western coastal area of Victoria is classified as core habitat for Southern Right Whale *Eubalaena australis* as a large established aggregation area for the species where calving occurs (DSEWPC, 2012). The Study Area is mapped as a foraging area for the Pygmy Blue Whale *Balaenoptera musculus brevicauda*, since the Bonney Upwelling creates a high primary productivity area for feeding. The Study Area is identified as a BIA for White Shark *Carcharodon carcharias* as a foraging area, particularly due to the proximity of the seal colony at Cape Bridgewater.

Construction of the offshore Project components has potential to directly impact on migratory marine fauna through underwater noise, vibration, and lighting, as well as sedimentation and habitat disturbance from piling, dredging, trenching and other underwater construction activities. Operational noise and vibration from offshore turbines and substations may also impact on migratory marine fauna however, is not considered to be a significant impact. Vessel movements pose a risk of fauna strike, especially for large, slow-moving fauna near the surface such as whales. It is likely that several whale species utilise the Study Area, although further studies will be required to confirm this assumption. Whales are vulnerable due to their slow swimming speed and lack of awareness of the threats posed by vessels. Pinnipeds and dolphins are also at risk of collision with high-speed vessels. Further details will be required to determine vessel traffic intensities, but it would be higher during the construction and decommissioning stages than operations and is not considered to result in significant impacts.

Migratory whale, dolphin, shark and fish species primarily inhabit oceanic waters, occasionally moving into coastal waters. The Study Area may support these species but is unlikely to represent an ecologically significant proportion of the population of these species (other than those mentioned above). The Study Area is also not likely to provide key habitat for turtle species. The Project is therefore not likely to have a significant impact on these species.

Migratory Terrestrial Birds

Migratory terrestrial birds are likely to be impacted during the construction phase if onshore works result in modification or destruction to important habitat for these species. However, an on-site assessment is required to assess the availability of habitat for terrestrial birds. While potential impacts on habitat for these species have potential to occur during construction, it is not considered likely to be significant. Further investigations will be undertaken to identify any important habitat for migratory terrestrial bird species within the onshore Study Area and would be avoided by Project works as far as practicable. Project works are not likely to result in significant impacts on migratory terrestrial species.

It is unlikely that migratory terrestrial birds will traverse the offshore marine area and be at risk of collision with wind turbines or be impacted by operational wind turbine noise, with the exception of White-throated Needletail *Hirundapus caudacutus*, Fork-tailed Swift *Apus pacificus* and Satin Flycatcher *Myiagra cyanoleuca* that migrate across Bass Strait. There is potential for these species to pass through the offshore Study Area as they traverse Bass Strait, putting them at risk of colliding with a wind turbine.

Migratory Shorebirds, Wetland Birds, and Terns

It is likely that the offshore component of the Project will be well beyond the flight range of migratory shorebird species. Although flight heights during migration are still poorly understood for most species, available evidence suggests that migrating shorebirds travel at great heights and will likely be beyond the rotor-swept area should they traverse the offshore area. There may be potential habitat for migratory shorebirds, wetland birds and terns within the onshore Study Area that has potential to be impacted by Project construction works, including the Glenelg Estuary and Discovery Bay Ramsar Wetlands site. The coastal habitat of Discovery Bay is known to be utilised by several migratory species and provide habitat for resident shorebirds. Construction of the subsea cabling shoreline crossing has potential to impact on suitable habitat for migratory shorebird species. Indirect impact from potential altering of water quality in nearby Ramsar sites if construction works creates sedimentation or introduces contaminants could also impact listed migratory shorebird, wetland, and tern bird species habitat.

While there is potential for direct and indirect impacts to occur, the Project is unlikely to have a significant impact on migratory shorebird species. Further investigations will be undertaken to determine the likelihood of migratory shorebirds to occur within the Study Area as well as the presence of suitable onshore habitat. The Project would ensure direct impacts on potential migratory shorebird habitat at the subsea cabling shoreline crossing would be avoided and minimised as far as practicable.

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

Yes

4.1.5.5 Describe why you consider this to be a Significant Impact. *

Onshore

The Project is anticipated to result in potential significant impacts on Bass Strait migratory birds only due to the offshore Project components. The Project is not anticipated to result in potential significant impacts on migratory shorebirds and terrestrial birds due to the onshore Project components.

Offshore

There is potential for the Project to result in significant impacts on migratory seabirds, Bass Strait migrants, and some migratory marine fauna species.

The main potential impact of concern for migratory seabirds is the collision with the offshore wind turbines. Several species of migratory seabirds are expected to occur within the offshore Study Area, including 14 species of albatross, six species of Petrel and three species of Shearwater. The offshore Study Area is also mapped as a BIA several albatross species. Seabirds are known to feed on fish, cephalopod and/or crustaceans within the marine environment, diving to the surface water level or just below which can make them vulnerable to turbine strike. Large pelagic seabirds are most at risk from turbine strike as they which feed in offshore waters and are slow fliers, which means they may be unable to evade the moving rotors. If feeding offshore, they would potentially be within the range for death or damage for turbine strike. There is also potential for White-throated Needletail *Hirundapus caudacutus*, Fork-tailed Swift *Apus pacificus* and Satin Flycatcher *Myiagra cyanoleuca* to pass through the offshore Study Area as they traverse Bass Strait, putting them at risk of colliding with a wind turbine.

The potential for significant impact would be through substantially modifying, destroying, or isolating areas of important habitat for migratory seabird species, as well as the potential to seriously disrupt the lifecycle of an ecologically significant proportion of the population of a migratory seabird species. It is therefore considered likely that the Project has potential to significantly impact on the 27 identified migratory seabird species, as well as White-throated Needletail *Hirundapus caudacutus*, Fork-tailed Swift *Apus pacificus* and Satin Flycatcher *Myiagra cyanoleuca*.

The Project has potential to significantly impact on Blue Whale, Southern Right Whale and White Shark species. The main potential impact would be associated with construction works, including pile driving and underwater noise and vibration, as well potential operational noise. This has potential to significantly impact these species through adversely affecting critical habitat for these species, and potentially modifying or decreasing the availability of quality habitat.

Further assessment is required to determine the utilisation of the Study Area by seabird species, Bass Strait migrants, and migratory marine fauna and the potential for significant impacts to occur. However, in the absence of detailed assessments a precautionary approach has been applied where it has been assumed the potential impacts on these species are significant.

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

Yes

4.1.5.8 Please elaborate why you think your proposed action is a controlled action. *

Refer to **Section 4.1.5.5** as to why the proposed action is considered likely to have a significant impact and therefore be deemed 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. *

Refer to **Section 4.1.4.10** for proposed avoidance and mitigation measures.

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

No offsets are currently proposed in relation to the above mitigation measures and potential impacts, however once detailed assessments and field surveys are completed, offset requirements will be confirmed for the project.

The Preliminary Desktop Marine Environmental Assessment (BMT, 2022) is provided in **Attachment 7,** Section 6, pp 65-69 and the Preliminary Desktop Biodiversity Constraints Assessment (Biosis, 2022) is provided in **Attachment 6,** Section 5, pp 52-58 which provides further information on mitigation measures proposed for the Project.

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 does not occur within an area of uranium mining, nor is this a proposed action of the project.

Radioactive waste will not be produced from the project activities.

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.

Direct impact	Indirect impact	Commonwealth marine area
Yes	Yes	EEZ and Territorial Sea

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 proposed turbines, inter array cabling, sections of subsea export cabling and offshore substations are located within the Commonwealth marine area. The Bonney Coast Upwelling is a key ecological feature (KEF) mapped within the Commonwealth marine area and the Study Area for the Project. The Commonwealth marine area is likely to support several threatened and migratory marine species, as identified in **Sections 4.1.4.2 and 4.1.5.2** of this referral.

Direct or indirect impacts on the Commonwealth marine area that may occur from construction and/or operation of the Project include:

- Unplanned spills
- Changes to hydrodynamics
- Introduction of pest species
- Dropped objects from vessels and installation platforms
- Cable laying (or removal) and piling activity resulting in water and sediment quality impacts
- Artificial lighting pollution
- Underwater noise and vibration
- Discharges from vessels

Marine and migratory species and habitats could potentially be affected by the construction and operation of the proposed action.

The Project is not anticipated to result in known or potential pest species becoming established within the Commonwealth marine area, with appropriate controls in place. It is also not anticipated that the Project would modify, destroy, fragment, isolate or disturb an important or substantial area of habitat such that an adverse impact on marine ecosystem functioning or integrity in a Commonwealth marine area.

Some impacts such as underwater noise or lighting pollution may cause some avoidance behaviour in marine species or cetacean individuals, however, it is unlikely to have a substantial adverse effect on a population and its spatial distribution. Project works would not result in a substantial change in air quality or water quality, or the accumulation of persistent organic chemicals, heavy metals, or other harmful chemicals, that could adversely impact on biodiversity, ecological integrity, social amenity or human health.

There are five shipwrecks of heritage value within the offshore Study Area: The Triumph (ID 6654), Jane (ID 6303), Captain Cook (ID6042), Isabella (ID 6286), Merope (ID 6429) and one shipwreck located in the onshore Study Area: Unknown French Whaler (ID 6758). A permit is required to undertake activities which may impact on underwater heritage under the Commonwealth *Underwater Cultural Heritage Act 2018*.

The Project Area does not directly interact with any of the shipwreck location. The closest shipwrecks to the Project Area (infrastructure and construction works) are the Captain Cook near the Option 1 subsea export cable, however the Project would seek to avoid locating any project infrastructure within proximity to this site and would ensure construction works do not impact on this site. The Project is therefore not likely to have a substantial adverse impact on heritage values of the Commonwealth marine area, including damage or destruction of an historic shipwreck.

With appropriate controls in place, these potential direct and indirect impacts are considered to be a low risk and would be localised should they occur. They are unlikely to have a ‘substantial’ or ‘persistent’ adverse impact on the Commonwealth marine environment. Impacts to Commonwealth marine areas are not expected to be significant, however further investigations will be undertaken to ensure no significant impacts occur.

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

Yes

4.1.7.5 Describe why you consider this to be a Significant Impact. *

There is the potential for direct and indirect impacts to Commonwealth marine waters, as a result of spills, cable laying (or removal), piling activity, the introduction of pest species or changes to hydrodynamics.

With appropriate controls in place, these impacts are considered to be a low risk, and localised, however due to the importance of the Bonney Coast Upwelling to a number of threatened species, there is potential for a significant impact on commonwealth marine areas, although the extent of impact is difficult to assess at present without further investigation.

As further investigations will need to be undertaken to confirm the likely direct and/or indirect impact of the proposed action, at this stage and with reference to the precautionary principle we consider the potential for a significant impact cannot be dismissed.

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

Yes

4.1.7.8 Please elaborate why you think your proposed action is a controlled action. *

Refer to **Section 4.1.7.5** as to the potential for the proposed action to have a significant impact on Commonwealth marine areas. The action may have a significant impact on Commonwealth marine areas due to the potential for:

- Introduction of pest species through construction and vessel movements associated with the Project
- Destruction or disturbance of an important or substantial area of habitat resulting in an adverse ecosystem impact could result from piling works for turbine and substation foundations, or subsea export cable trenching (if required)
- Substantial adverse effects on a population of marine species or cetacean including its life cycle (breeding, feeding, migration behaviour etc) and spatial distribution, which could result from underwater acoustic and vibration impacts during turbine operation
- Substantial change in air quality or water quality which may adversely impact biodiversity, social amenity or human health, which could result from spills from construction and/or operation activities

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. *

Refer to **Section 4.1.4.10** for proposed avoidance and mitigation measures.

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

No offsets are proposed in relation to the above mitigation measures. The Preliminary Desktop Marine Environmental Assessment (BMT, 2022) is provided in **Attachment 7,** Section 6, pp 65-69 which provides further details on mitigation measures proposed for the Project.

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 proposed action will not directly or indirectly impact the Great Barrier Reef.

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 proposed action is not a coal seam or large-scale mining development.

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 proposed action is not being undertaken, on, or within close proximity to Commonwealth land.

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. *

The proposed action will not impact any Commonwealth Heritage places overseas.

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:

- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Commonwealth Marine Area (S23)

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)
- Nuclear (S21)
- 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. *

BlueFloat Energy International S.L.U have undertaken a number of feasibility and site selection studies to date, including the desktop environmental assessments submitted with this referral, to identify a suitable Project location in the Portland region, taking into consideration the following factors:

- Consistent strong wind patterns
- Relatively shallow water depths that are favourable for installing fixed foundation offshore wind infrastructure (i.e. turbines and substations)
- Proximity to the existing electricity network at the Heywood Terminal Station or Portland Aluminum Smelter switchyard
- Proximity to Keppel Prince wind turbine manufacturing factory in Portland
- Suitable onshore infrastructure such as Port of Portland
- Opportunity with the Portland Aluminum Smelter to share common infrastructure and reduce potential environmental and community effects
- Low population density in the surrounding onshore areas both in Victoria and South Australia (predominantly agricultural use near the coast)
- Existing and historical industrial development in Glenelg LGA near Portland
- Presence of a political will for energy transition within the region
- Opportunity to engage with the local manufacturing industry within the region and contribute to significant economic benefits to Glenelg region and Victoria more broadly
- Opportunity to utilise existing fishing infrastructure and knowledge in the locality
- Opportunity to re-skill the local workforce into renewable-associated employment

BlueFloat Energy considered several options along the Portland coastline. Two options were assessed with consideration of a range of factors including potential environment and social effects, potential grid connection opportunities, as well as constructability and design issues.

The current proposed site off the Discovery Bay coastline was selected as the preferred site due to the following:

- Consistent strong wind patterns
- Suitable nearby port infrastructure at the Port of Portland
- A reduced visual impact was likely to occur due to the limited number of nearby communities along the adjacent coastline, compared to other options
- There was greater capacity for the proposed transmission grid connection point and transmission route options (including shared infrastructure routes)
- Preferable water depths at the Portland site providing reduced associated construction costs

The selected site for the Project is an ideal location to develop an offshore wind farm for a number of reasons. The offshore wind farm component of the Project is proposed to be located in the Commonwealth Waters of the Pacific Ocean region off Portland in Victoria, which has been identified by the Commonwealth Minister for Climate Change and Energy as one of six proposed offshore wind regions in Australia. The Commonwealth Minister for Climate Change and Energy has announced the Government's intention to commence consultation on the Pacific Ocean region off Portland in Victoria.

In addition, the onshore components of the Project (transmission infrastructure) are located within the South West Renewable Energy Zone (REZ). The Victorian Government has committed to developing REZs, including the South West REZ, to bring in 10 GW of new renewable energy capacity into the Victorian grid (DELWP, 2021).

The proposed timeline for the Project aims to bring online up to 1.155 GW of renewable electricity into the NEM in 2030. This timeline supports the Victorian Government's offshore wind target of at least 2 GW by 2032, 4 GW by 2035 and 9GW by 2040. Developing the Project within this timeline will help support the energy market transition as a number of current energy generators (i.e. coal plants) within the State are brought offline over the coming years.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

#1.	Attachment 1_Referral Figures	Document	EPBC referral supporting figures
#2.	Attachment 1_Referral Figures_Redacted Version	Document	Supporting figures for the referral with redacted cultural heritage figure.
#3.	Attachment 2_Construction, Operation, and Decommissioning Activities	Document	Details of the construction, operation and decommissioning activities for the Project

1.2.7 Public consultation regarding the project area

#1.	Attachment 3 - Preliminary Social Risks and Opportunities	Document	Preliminary Social Risks and Opportunities Report

1.3.2.16 (Person proposing to take the action) Nature of the trust arrangement in relation to the proposed action

#1.	Attachment 4 - Trust Deed	Document	

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

#1.	Attachment 5 - HSE Policy	Document	HSE Policy

3.1.1 Current condition of the project area's environment

#1.	Attachment 1_Referral Figures	Document	EPBC Referral Figures
#2.	Attachment 6 - Desktop Biodiversity Constraints Assessment	Document	Preliminary Desktop Biodiversity Assessment
#3.	Attachment 7 - Preliminary Marine Environmental Assessment	Document	Marine environmental assessment
#4.	Southern Right Whale Our Wildlife Fact Sheet. State of Victoria.	Link (Webpage)	https://www.wildlife.vic.gov.au/__data/assets/pdf_file/0021/90750/Southern Right-Whale.pdf

3.1.2 Existing or proposed uses for the project area

#1.	Attachment 3 - Preliminary Social Risks and Opportunities	Document	Preliminary Social Risks and Opportunities Report
#2.	Attachment 6 - Desktop Biodiversity Constraints Assessment	Document	Preliminary Desktop Biodiversity Assessment
#3.	Attachment 7 - Preliminary Marine Environmental Assessment	Document	Marine environmental assessment
#4.	Assessment of the Sustainability of Victorian Abalone Resources	Link (Dissertation or thesis)	https://www.researchgate.net/publication/252930508_Assessment_of_the_
#5.	Marine Traffic	Link (Webpage)	https://www.marinetraffic.com/en/ais/home
#6.	South-east Commonwealth Marine Reserves Network Management Plan, 2013-23	Link (Dissertation or thesis)	https://www.legislation.gov.au/Details/F2013L00423/Explanatory%20Stater

3.1.3 Natural features, important or unique values that applies to the project area

#1.	Attachment 6 - Desktop Biodiversity Constraints Assessment	Document	Preliminary Desktop Biodiversity Assessment
#2.	Attachment 7 - Preliminary Marine Environmental Assessment	Document	Marine environmental assessment
#3.	Attachment 8 - REDACTED Preliminary Desktop Cultural Heritage Constraints Assessment	Document	REDACTED Preliminary Desktop Cultural Heritage Constraints Assessment
#4.	Discovery Bay Marine National Park Management Plan	Link (Dissertation or thesis)	https://www.parks.vic.gov.au/places-to-see/parks/discovery-bay-marine-national-park

3.1.4 Gradient relevant to the project area

#1.	Attachment 7 - Preliminary Marine Environmental Assessment	Document	Marine environmental assessment

3.2.1 Flora and fauna within the affected area

#1.	Attachment 6 - Desktop Biodiversity Constraints Assessment	Document	Preliminary Desktop Biodiversity Assessment
#2.	Attachment 7 - Preliminary Marine Environmental Assessment	Document	Marine environmental assessment

3.2.2 Vegetation within the project area

#1.	Attachment 6 - Desktop Biodiversity Constraints Assessment	Document	Preliminary Desktop Biodiversity Assessment
#2.	Atlas of Australian Sulfate Soils	Link (Webpage)	https://www.asris.csiro.au/themes/AcidSulfateSoils.html

3.3.1 Commonwealth heritage places overseas or other places that apply to the project area

#1.	Attachment 8 - Preliminary Desktop Cultural Heritage Constraints Assessment	Document	Preliminary Desktop Cultural Heritage Constraints Assessment
#2.	Attachment 8 - REDACTED Preliminary Desktop Cultural Heritage Constraints Assessment	Document	REDACTED Preliminary Desktop Cultural Heritage Constraints Assessment

3.3.2 Indigenous heritage values that apply to the project area

#1.	Attachment 1_Referral Figures_Redacted Version	Document	Collation of figures to support the EPBC referral with redacted cultural heritage figure
#2.	Attachment 8 - Preliminary Desktop Cultural Heritage Constraints Assessment	Document	Preliminary Desktop Cultural Heritage Constraints Assessment
#3.	Attachment 8 - REDACTED Preliminary Desktop Cultural Heritage Constraints Assessment	Document	REDACTED Preliminary Desktop Cultural Heritage Constraints Assessment
#4.	Ethnological notes on the Aboriginal tribes of New South Wales and Victoria	Link (Dissertation or thesis)	https://www.nature.com/articles/074100a0
#5.	How rising sea levels could shrink Australia and spark a coastal exodus	Link (Dissertation or thesis)	https://www.abc.net.au/news/2018-01-16/rising-sea-levels-could-shrink-australia-coastal-exodus/93334
#6.	Ngootyoong Gunditj Ngootyoong Mara-South West Management Plan	Link (Webpage)	https://www.gml.com.au/projects/ngootyoong-gunditj-ngootyoong-mara-management-plan/
#7.	Sea-level change and demography during the last	Link (Journal article)	https://researchonline.jcu.edu.au/52001/

glacial termination and early Holocene across the Au

3.4.1 Hydrology characteristics that apply to the project area

#1.	Attachment 9 - Preliminary Hydrology Assessment	Document	Preliminary Hydrology Assessment
#2.	Groundwater Dependent Ecosystems Atlas	Link (Webpage)	http://www.bom.gov.au/water/about/publications/document/BOM_GDE_Atl

4.1.3.2 (Ramsar Wetland) Why your action has a direct and/or indirect impact on the identified protected matters

#1.	Attachment 6 - Desktop Biodiversity Constraints Assessment	Document	Preliminary Desktop Biodiversity Assessment

4.1.3.11 (Ramsar Wetland) Proposed offsets relevant to avoidance or mitigation measures

#1.	Attachment 6 - Desktop Biodiversity Constraints Assessment	Document	Preliminary Desktop Biodiversity Assessment
#2.	Attachment 7 - Preliminary Marine Environmental Assessment	Document	Marine environmental assessment

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

#1.	Attachment 10 - Section 4.1.4.2	Document	Additional information
#2.	Attachment 6 - Preliminary Desktop Biodiversity Constraints Assessment	Document	Preliminary Desktop Biodiversity Assessment
#3.	Attachment 7 - Preliminary Marine Environmental Assessment	Document	Marine environmental assessment

4.1.4.11 (Threatened Species and Ecological Communities) Proposed offsets relevant to avoidance or mitigation measures

#1.	Attachment 6 - Preliminary Desktop Biodiversity Constraints Assessment	Document	Preliminary Desktop Biodiversity Assessment
#2.	Attachment 7 - Preliminary Marine Environmental Assessment	Document	Marine environmental assessment

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

#1.	Attachment 6 - Preliminary Desktop Biodiversity Constraints Assessment	Document	Preliminary Desktop Biodiversity Assessment
#2.	Attachment 7 - Preliminary Marine Environmental Assessment	Document	Marine environmental assessment

4.1.5.11 (Migratory Species) Proposed offsets relevant to avoidance or mitigation measures

#1.

	Attachment 6 - Preliminary Desktop Biodiversity Constraints Assessment	Document	Preliminary Desktop Biodiversity Assessment
#2.	Attachment 7 - Preliminary Marine Environmental Assessment	Document	Marine environmental assessment

4.1.7.11 (Commonwealth Marine Area) Proposed offsets relevant to avoidance or mitigation measures

#1.	Attachment 7 - Preliminary Marine Environmental Assessment	Document	Marine environmental assessment

5.2 Declarations

Completed Referring party's declaration

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

ABN/ACN	18059519041
Organisation name	UMWELT (AUSTRALIA) PTY. LTD.
Organisation address	75 York Street, Teralba, NSW 2284
Representative's name	Caroline Funnell
Representative's job title	Principal Environmental Consultant
Phone	0449 947 686
Email	cfunnell@umwelt.com.au
Address	Level 7, 180 Flinders Street, Melbourne, Victoria 3000

☑ 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, **Caroline Funnell of UMWELT (AUSTRALIA) 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	662232895
Organisation name	Southern Winds OWP Project Pty Ltd
Organisation address	The Commons, 11 Wilson Street, South Yarra, Victoria 3141
Representative's name	Southern Winds OWP Project Pty Ltd C/- Deb Neumann
Representative's job title	Director, Environment and Planning, BlueFloat Energy on behalf of Southern Winds Project P/L
Phone	0414811290
Email	dneumann@bluefloat.com
Address	The Commons, 11 Wilson Street, South Yarra, Victoria 3141

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, **Southern Winds OWP Project Pty Ltd C/- Deb Neumann of Southern Winds OWP Project 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, **Southern Winds OWP Project Pty Ltd C/- Deb Neumann of Southern Winds OWP Project 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. *