

REFERRAL OF A PROJECT FOR A DECISION ON THE NEED FOR ASSESSMENT UNDER THE *ENVIRONMENT EFFECTS ACT 1978*

REFERRAL FORM

The *Environment Effects Act 1978* provides that where proposed works may have a significant effect on the environment, either a proponent or a decision-maker may refer these works (or project) to the Minister for Planning for advice as to whether an Environment Effects Statement (EES) is required.

This Referral Form is designed to assist in the provision of relevant information in accordance with the *Ministerial Guidelines for assessment of environmental effects under the Environment Effects Act 1978* (Seventh Edition, 2006). Where a decision-maker is referring a project, they should complete a Referral Form to the best of their ability, recognising that further information may need to be obtained from the proponent.

It will generally be useful for a proponent to discuss the preparation of a Referral with the Impact Assessment Unit (IAU) at the Department of Environment, Land, Water and Planning (DELWP) before submitting the Referral.

If a proponent believes that effective measures to address environmental risks are available, sufficient information could be provided in the Referral to substantiate this view. In contrast, if a proponent considers that further detailed environmental studies will be needed as part of project investigations, a more general description of potential effects and possible mitigation measures in the Referral may suffice.

In completing a Referral Form, the following should occur:

- Mark relevant boxes by changing the font colour of the 'cross' to black and provide additional information and explanation where requested.
- As a minimum, a brief response should be provided for each item in the Referral Form, with a more detailed response provided where the item is of particular relevance. Cross-references to sections or pages in supporting documents should also be provided. Information need only be provided once in the Referral Form, although relevant cross-referencing should be included.
- Responses should honestly reflect the potential for adverse environmental effects. A Referral will only be accepted for processing once IAU is satisfied that it has been completed appropriately.
- Potentially significant effects should be described in sufficient detail for a reasonable conclusion to be drawn on whether the project could pose a significant risk to environmental assets. Responses should include:
 - a brief description of potential changes or risks to environmental assets resulting from the project;
 - available information on the likelihood and significance of such changes;
 - the sources and accuracy of this information, and associated uncertainties.
- Any attachments, maps and supporting reports should be provided in a secure folder with the Referral Form.
- A USB copy of all documents will be needed, especially if the size of electronic documents may cause email difficulties. **Individual documents should not exceed 10MB as they will be published on the Department's website.**

- A completed form would normally be between 15 and 30 pages in length. Responses should not be constrained by the size of the text boxes provided. Text boxes should be extended to allow for an appropriate level of detail.
- The form should be completed in MS Word and not handwritten.

The party referring a project should submit a covering letter to the Minister for Planning together with a completed Referral Form, attaching supporting reports and other information that may be relevant. This should be sent to:

Postal address

**Minister for Planning
PO Box 500
EAST MELBOURNE VIC 8002**

Couriers

**Minister for Planning
Level 16, 8 Nicholson Street
EAST MELBOURNE VIC 3002**

In addition to the submission of the hardcopy to the Minister, separate submission of an electronic copy of the Referral via email to ees.referrals@delwp.vic.gov.au is required. This will assist the timely processing of a referral.

PART 1 PROPONENT DETAILS, PROJECT DESCRIPTION & LOCATION

1. Information on proponent and person making Referral

Name of Proponent:	Greater Gippsland OWP Project Pty Ltd ACN 659 878 574 as trustee for the Greater Gippsland OWP Project Trust on behalf of BlueFloat Energy International S.L.U.
Authorised person for proponent: Position: Postal address: Email address: Phone number: Facsimile number:	Deb Neumann Director, Environment and Planning BlueFloat Energy International S.L.U The Commons, 11 Wilson Street, South Yarra, 3141 dneumann@bluefloat.com 0414 811 290 N/A
Person who prepared Referral: Position: Organisation: Postal address: Email address: Phone number: Facsimile number:	Caroline Funnell Principal Environmental Consultant Umwelt Australia Pty Ltd Level 7 / 180 Flinders Street, Melbourne VIC 3000 cfunnell@umwelt.com.au 0449 947 686 N/A
Available industry & environmental expertise: (areas of 'in-house' expertise & consultancy firms engaged for project)	<p>The Proponent</p> <p>The Greater Gippsland OWP Project Pty Ltd ACN 659 878 574 as trustee for the Greater Gippsland OWP Project Trust is the proponent for the Greater Gippsland Offshore Wind Project on behalf of BlueFloat Energy International S.L.U.</p> <p>In Australia, BlueFloat Energy International S.L.U is developing three other offshore wind projects. These are Southern Winds Offshore Wind Project near Portland in Victoria, Hunter Coast Offshore Wind Project and South Pacific Offshore Wind Project in New South Wales.</p> <p>BlueFloat Energy International S.L.U is a nimble and fast-growing offshore wind developer shaping the global energy transformation by bringing scaled decarbonization solutions to new markets. Leveraging the team's extensive knowledge and hands-on experience in bottom-fixed 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 bottom-fixed and floating wind farm projects comprises over 22 GW of planned capacity in nine countries across the globe.</p> <p>The Consultant</p> <p>Umwelt Australia Pty Ltd (Umwelt) were engaged as the Lead Consultant to prepare and coordinate specialist environmental and planning desktop assessments and referrals under the Victorian <i>Environment Effects Act 1978</i> and the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> for this Project.</p>

	<p>Umwelt is experienced in undertaking environmental impact assessments, conducting specialist impact studies, obtaining approvals for complex major energy and infrastructure developments.</p> <p>BMT Global (BMT) and Biosis were also engaged to provide specialist technical assessment and advice.</p> <p>BMT completed a preliminary marine environmental risk assessment. BMT have over 35 years of experience and a rich heritage of marine research and are highly experienced in environmental impact assessments in complex marine environments in Australia.</p> <p>Biosis completed a preliminary terrestrial biodiversity assessment. Biosis have over 40 years of experience in ecological assessments and are currently undertaking biodiversity assessments for other offshore wind projects in Victoria, including the Southern Winds Offshore Wind Project.</p> <p>This referral is supported by the following figures and technical studies:</p> <ul style="list-style-type: none"> • Attachment 1: Referral Figures • Attachment 2: Preliminary Desktop Terrestrial Biodiversity Assessment (Biosis, 2022) • Attachment 3: Preliminary Hydrology Assessment (Umwelt, 2022) • Attachment 4: Summary of Impacts Report including a desktop assessment of land use, landscape and visual, contaminated land and amenity (Umwelt, 2022). • Attachment 5: Preliminary Desktop Marine Environmental Assessment (BMT, 2022) • Attachment 6: Preliminary Cultural Heritage and Archaeology Assessment (Umwelt, 2022) • Attachment 7: Preliminary Social Opportunities and Risk Analysis (Umwelt, 2022) • Attachment 8: AusNet letter of support
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2. Project – brief outline

<p>Project title: Greater Gippsland Offshore Wind Project (the Project)</p>
<p>Project location: (describe location with AMG coordinates and attach A4/A3 map(s) showing project site or investigation area, as well as its regional and local context)</p> <p>The Greater Gippsland Offshore Wind Project (the Project) is comprised of an offshore wind farm component and supporting transmission infrastructure located onshore and offshore, in the south-west Gippsland region of Victoria. See Figure 1 in Attachment 1 for the Project location context and Figure 2 in Attachment 1 for the Project Area and Study Area applied to the desktop assessments.</p> <p>This referral presents the whole Project for full context including offshore components in Commonwealth waters, however, the area subject to assessment and approval under Victorian</p>

law is located onshore and within State waters (up to 3 nautical miles from the low water line on the coastline) as shown in **Figure 3 in Attachment 1**.

The offshore wind turbine component of the Project is located in Commonwealth waters approximately 10 - 43 kilometres (km) off the coastline between Seaspray and Woodside Beach.

Onshore transmission infrastructure will be located within the Wellington Local Government Area (LGA), with the grid connection point at either the Hazelwood Terminal Station switchyard or Loy Yang Power Station switchyard in the Latrobe LGA (see transmission route options 1a, 1b and 2 in **Figure 2 in Attachment 1**). Refer to **Section 3** for further information on the Project description.

Transmission route option 1a is the proposed Gippsland Renewable Energy Zone project (G-REZ) (Referral number 2022-R06), whilst option 1b follows the same route as G-REZ but is a standalone transmission line connection. Option 2 is a separate and standalone transmission line connection which follows a different route to options 1a and 1b. Transmission route option 1a is the preferred grid connection for the Project. It is noted that the transmission line options proposed as part of the Project were identified prior to release of the Victorian State Governments *Offshore Wind Implementation Statement 1* (October 2022) and accordingly the location of the grid connection may be subject to further review and consideration.

Two subsea cable route options between the two to four offshore substations and the new substation indicatively shown at Giffard, northwest of Lake Denison, are under consideration. Both options cross State waters and will land onshore either to the north or south of the Ninety Mile Beach Marine National Park before connecting into the new substation indicatively shown at Giffard.

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 expansions and / or upgrade activities are not included within the scope of the Project (and this referral) and will be delivered by a third party to service multiple offshore wind projects in the Gippsland region.

The Australian Map Grid (AMG) coordinates of the Project are shown in **Table 1**.

Table 1: Project coordinates

Location point	Easting	Northing
Offshore Wind Project Area - South	530867	5705553
Offshore Wind Project Area - East	548728	5727234
Offshore Wind Project Area - North	522540	5741583
Offshore Wind Project Area - West	507514	5728526
Option 1 beach landing point	510733	5746167
Option 2 beach landing point	515950	5751805
Indicative substation - Giffard	507415	5752604
Onshore Transmission Route Option 1a and 1b - Termination at the Hazelwood Terminal Station switchyard	449932	5762809
Onshore Transmission Route Option 2 - Termination at the Loy Yang Power Station switchyard	462812	5765492

The following terminology is used throughout this referral:

- **Offshore** - refers to all areas from the low water line along the coast out to sea (both Commonwealth and State waters)
- **Onshore** - refers to all land-based areas above the low water line along the coast
- **State waters** – from the low water line along to the coast to 3 nautical miles seaward
- **Commonwealth waters** – any waters inside the seaward boundary of the Exclusive Economic Zone (200 nautical miles from the low water mark of the coastline) but excluding State waters.

Short project description (few sentences):

The Project is a fixed-bottom offshore wind farm consisting of 139 turbines, two to four offshore substations and associated infrastructure with the capacity to generate up to 2.085 gigawatts (GW) of electricity.

The offshore wind turbine component of the Project is located in Commonwealth waters approximately 10 - 43 km off the coastline between Seaspray and Woodside Beach.

The components of the Project, which are subject to assessment and approval under Victorian law, are located onshore and within State waters (see **Figure 3** in **Attachment 1**) and are described as follows:

- Two subsea export cables from the offshore substations landing on the shoreline near to (but not intersecting) the Ninety Mile Beach Marine National Park (also partially located within Commonwealth waters)
- An underground cable from the shore landing point, running inland for approximately 8 to 16 km to a new substation indicatively shown at Giffard (or further inland along the transmission route)
- A new onshore substation (indicatively shown at Giffard) that would transition the underground cable to an overhead transmission line.

The connection to the National Energy Market (NEM) will be at either the Hazelwood Terminal Station switchyard or the Loy Yang Power Station switchyard in the Latrobe Valley (see **Figure 2** in **Attachment 1**). The connection will be via a combination of subsea and underground cables between the offshore substations and onshore substation as follows:

- Option 1a and 1b - an approximately 85 km long, 500 kV overhead transmission line from the substation running northwest to the Hazelwood Terminal Station; or
- Option 2 - an approximately 65 km long, 500 kV overhead transmission line from the substation running mostly parallel to the existing Basslink to the Loy Yang Power Station.

Key offshore components are located within Commonwealth waters and will be assessed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). These are:

- 139 offshore wind turbine generators (WTG) fixed to the seabed with foundations. The turbines would have a capacity 15 MW to 20 MW, a hub height between 165 m and 190 m, and a rotor diameter of between 250 m to 275 m.
- Two to four offshore substations fixed to the seabed with foundations
- A network of inter-array subsea cabling connecting the WTGs together and to the offshore substations
- Sections of the export subsea cables between the offshore substations to the point where they meet State waters.

Further information about the Project is provided in **Section 3**.

3. Project description

Aim/objectives of the project (what is its purpose / intended to achieve?):

The primary objective of the Project is to develop an offshore wind farm that will generate and supply renewable energy into the NEM to supplement Victoria's energy supply, and to support Victoria's and Australia's transition to renewable energy. The Project will be a key contributor to mitigating the projected impacts of climate change by providing renewable sources of energy and subsequently reducing greenhouse gas emissions from fossil fuel energy generation.

Key objectives of the Project include:

- Generate and supply up to 2.085 GW of renewable electricity into the NEM, equivalent of powering approximately 1 million Victorian homes
- Contribute to the decarbonisation of Australia's energy market
- Bring BlueFloat Energy's overseas expertise in the offshore wind sector to Australia
- Support the Victorian Government's offshore wind target of at least 2 GW by 2032, 4 GW by 2035 and 9 GW by 2040
- Support the Victorian Government's legislated renewable energy target of 50 percent by 2030 (DELWP, 2021)
- Contribute to Victoria's greenhouse gas reduction target of net zero emissions by 2050 by displacing approximately 7.3 million tonnes of carbon dioxide
- Support the Commonwealth Government's commitment to achieve up to 43 percent emission reductions below 2005 levels by 2030 and net zero emissions by 2050 (Australia's Long Term Emission Plan, DISER, 2021).

The Project is anticipated to result in the following broader benefits:

- Support the transition from retiring coal fired energy generation facilities, including power plants in the Latrobe Valley
- Generate significant direct and indirect economic expenditure and benefits at the State and regional levels
- Utilise the existing highly skilled offshore workforce from the oil and gas industry within Australia
- Provide opportunities to upskill the existing workforce from Latrobe Valley mining and power generation industries to enable new employment opportunities in renewables
- Provide opportunities for local employment and procurement during construction and operation of the Project
- Provide greater energy security by contributing to protecting the State's energy network from power outages

Background/rationale of project (describe the context / basis for the proposal, e.g. for siting):

There is widespread consensus that decarbonising the energy market and transitioning to renewable energy is critical to reducing Australia's greenhouse gas emissions. Australia's greenhouse gas emissions are among the highest in the world, with Australia ranking tenth for greenhouse gas emissions on a per capita basis in 2019, at approximately 15.2 tonnes per capita (The World Bank, 2022). Just over half of Australia's greenhouse gas emissions in 2019 were attributed to stationary energy (fossil fuel combustion for generation of electricity and use in manufacturing and construction) (DISER, 2021). Emissions from electricity production accounted for 64% of emissions from stationary energy (DISER, 2021). Development of large-scale offshore wind projects, including the Greater Gippsland Offshore Wind Project, has potential to play a key role in the decarbonisation of Australia's energy market and supporting both Victoria and Australia's transition to renewable energy.

Offshore wind is known to be a viable source of renewable energy that has been widely developed across Europe and is anticipated to play a significant part in Victoria's renewable energy transition. Victoria has some of the world's best offshore wind resources, with coastal regions hosting the potential to support 13 GW of capacity by 2050 (DELWP, 2022). BlueFloat

Energy brings experience and expertise from developing offshore wind projects overseas to this Project.

Offshore wind farms have a number of advantages, including:

- Wind turbines can be sited offshore, where the wind is stronger for longer periods of time. Small increases in wind speed yield large increases in energy production
- Larger turbines can be installed offshore, which means they can capture high wind flows at a higher altitude
- Offshore wind speeds tend to be higher and steadier than on land as there is nothing around to interfere with wind flow such as trees, buildings, and topographic highs. Offshore turbines therefore capture more wind energy
- Due to the larger turbines and greater expanse that offshore wind farms can cover, they can produce substantially greater energy outputs than onshore wind and solar farms

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 will be located in the Commonwealth waters of Bass Strait off Gippsland, which has been nominated as the first declared area for offshore renewable energy projects by the Minister for Climate Change and Energy. This would be Australia's first offshore wind zone under the Commonwealth *Offshore Electricity Infrastructure Act 2021* should it be declared following the consultation period.

Victoria has some of the world's best offshore wind resources. Victoria is spearheading Australia's offshore wind sector, with offshore wind proposed to support its switch to renewables and play a vital role in Victoria's clean energy transition. Victoria has set ambitious targets of 2 GW of offshore generation by 2032, 4 GW of offshore wind capacity by 2035 and 9 GW by 2040.

In addition to the Commonwealth Government, the Australian Energy Market Operator (AEMO) and the Victorian Government have also declared Gippsland as being suitable for offshore wind farms and have identified them as being within a future Renewable Energy Zone (REZ). The Victorian Government has committed to developing REZs, including Gippsland, to bring in 10 GW of new renewable energy capacity into the Victorian grid (DELWP, 2021). The establishment of REZs is intended to facilitate an increase in renewable energy development.

The onshore components of the Project (the new substation and transmission line) are located within the Gippsland REZ (V5), which is one of Victoria's six REZs identified in AEMO's Integrated System Plan (ISP).

The selected site for the Project is an ideal location to develop an offshore wind farm for a number of reasons including, but not limited to:

- Consistent strong wind patterns
- Relatively shallow water depths that are favourable for installing fixed-bottom offshore wind infrastructure (i.e. turbines and substations)
- Proximity to the existing electricity transmission network in the Latrobe Valley
- Suitable locations for onshore infrastructure for construction and ongoing operations and maintenance, including but not limited to the Barry Beach Marine Terminal, Port Anthony, Port of Hastings and Port of Geelong in Victoria and Bell Bay in Tasmania
- Opportunity to collaborate with other renewable energy developers to share common infrastructure and reduce potential environmental and community effects
- Low population density in the surrounding onshore areas
- A long history of industrial development in Bass Strait
- Support for the accelerated retirement of brown coal-fired power stations within the region and providing Gippsland with renewable energy
- Presence of a political will for energy transition within the region
- Opportunity to engage with the local manufacturing industry within the region and contribute significant economic benefits to Gippsland and Victoria more broadly
- Opportunity to utilise existing oil and gas infrastructure in the offshore locality

- Opportunity to re-skill the Latrobe Valley workforce into renewable-associated employment

In October 2022, the Victorian Government released the *Offshore Wind Implementation Statement 1* (the Statement) which outlines the government's plans for the establishment of an offshore wind industry. This is the first in a series of implementation statements that will be released over the coming years and is designed to provide certainty and facilitate ongoing collaboration.

The Statement includes announcements and updates on transmission, ports, Offshore Wind Energy Victoria, boosting the capability of local industry and working with the Commonwealth to deliver streamlined regulation and legislation. Of relevance to this Project, the Statement says:

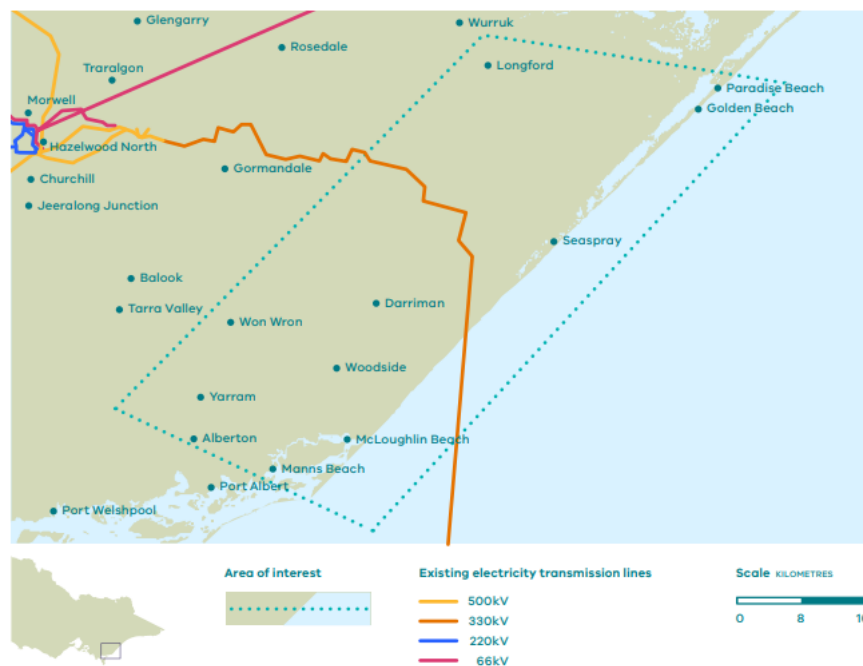
Notice 2, VicGrid will lead the development of transmission infrastructure that provides a coordinated connection point near the Gippsland Coast and Portland.

The Statement includes an area of interest for investigation and consultation, and existing transmission infrastructure as shown below. It also states:

Notice 3, VicGrid-led transmission will facilitate connection of up to 2-2.5 GW capacity in both Gippsland Coast and Portland.

The Victorian Government has committed to a first offshore wind target of at least 2 GW by 2032. To accommodate this, transmission infrastructure will be developed to facilitate connection of up to 2-2.5 GW generation capacity in both Gippsland and Portland respectively.

FIGURE 3 Gippsland Coast area of interest for investigation and consultation, and existing transmission infrastructure



It is noted that the transmission line options nominated as part of the Project were identified prior to release of the Statement and accordingly the location of the grid connection may be subject to further review and consideration.

It is also noted that the Statement states that the Port of Hastings is likely to be the preferred port to support offshore wind construction, subject to the necessary community and industry consultation and environment and planning approvals.

Main components of the project (nature, siting & approx. dimensions; attach A4/A3 plan(s) of site layout if available):

As noted earlier, this referral presents the whole Project for full context including offshore components in Commonwealth waters, however, the area subject to assessment and approval under Victorian law are located onshore and within State waters.

The Project design is continuing to develop and evolve as further technical investigations (environmental and engineering), stakeholder and community consultation and commercial and technological considerations are completed.

The Project for consideration in this referral consists of the following main components as shown in **Figure 2 in Attachment 1**:

Onshore Components in the Victorian jurisdiction

- Underground cables from the shore landing point running inland for approximately 8 to 16 km to a new substation. These cables will be either under bored or trenched between the offshore environment and the new substation. One onshore substation will transition electricity from the underground cable to an overhead transmission line. This is indicatively shown at Giffard but may be further inland along the transmission route.
- An approximately 85 km long, 500 kV overhead transmission line from the onshore substation travelling northwest towards the Hazelwood Terminal Station switchyard (option 1a and 1b) or an approximately 65 km long overhead transmission line located mostly alongside the existing Basslink corridor to the switchyard at the Loy Yang Power Station (option 2).

The onshore overhead transmission route is subject to ongoing consideration, with three transmission route options considered in this referral. As noted above, the transmission options nominated as part of the Project were identified prior to release of the Statement and accordingly the grid connection may be subject to further review and consideration.

Information about each option is provided in **Table 2**. The indicative route for each option is shown in **Figure 2 in Attachment 1**.

Table 2: Onshore overhead transmission route options

Option	Proponent	Detail
Option 1a	AusNet	An 85 km long 500 kV overhead transmission line from the new onshore substation to the Hazelwood Terminal Station switchyard. This is known as G-REZ and is proposed to be delivered by AusNet as a shared infrastructure resource for multiple renewable energy projects in Gippsland. G-REZ is subject to a separate assessment and approval process. This is the Project's preferred transmission line route. The Project has received a letter of support from G-REZ regarding its proposal to connect the Greater Gippsland Offshore Wind Project into as the preferred electricity transmission grid connection option. A copy of this letter is provided at Attachment 8 .
Option 1b	Greater Gippsland OWP Project Pty Ltd	Same route as above but delivered by the Project and dedicated to this Project.
Option 2	Greater Gippsland OWP Project Pty Ltd	A 65 km long 500 kV overhead transmission line from the new onshore substation to the switchyard at the Loy Yang Power Station. The route will predominantly travel in parallel to the existing Basslink corridor. This line would be dedicated to this Project.

Using G-REZ has several advantages. As a shared electricity transmission line, it will allow for multiple offshore and onshore renewable projects in the region to connect into the one line rather than multiple separate routes. In comparison to the cumulative impacts from this Project and others all delivering their own transmission route to Latrobe Valley, G-REZ provides benefits such as reduced visual and landscape impacts, reduced native vegetation loss and biodiversity impacts from habitat loss and disturbance, reduced cultural heritage impacts and reduced amenity impacts during construction.

As G-REZ is subject to separate assessment and approvals, a decision on whether the Project can use G-REZ is not likely to be made by the Project until that assessment and approvals

process is complete. For this reason, the Project will continue to progress assessment of Option 1b and / or Option 2 as outlined in **Table 2**.

A transmission line easement will be required for options 1b and 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 m to 100 m. The steel lattice towers for the 500 kV line are expected to be of a height up to 65 m and 80 m high.

The construction and use of a new onshore terminal station would require a plot size of approximately 35 ha. The indicative location of the substation at Giffard is shown on **Figure 2** in **Attachment 1**.

Offshore Components traversing the Commonwealth and Victorian State jurisdiction

Subsea export cables extending from the offshore substations to the onshore landing locations (option 1 and 2 are shown in **Figure 2** in **Attachment 1**). These options are subject to ongoing investigation but are designed to avoid direct interaction with the Ninety Mile Beach Marine National Park. Construction activities associated with the offshore subsea cabling include:

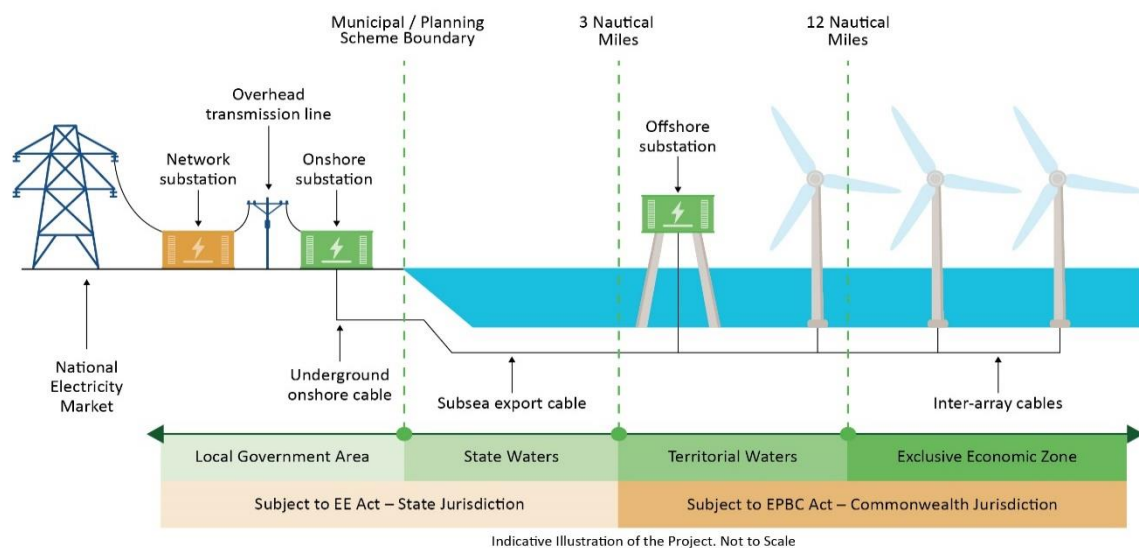
- Trenching of the seabed to allow for the laying of subsea export cables
- Laying and burying (trenching) or mechanical protection of the subsea export cables. These will be either trenched or bored. The use of horizontal directional drilling is the preferred method of construction, but the ultimate method will depend on the outcome of the further environmental investigations.

Offshore Components in the Commonwealth jurisdiction

- 139 offshore wind turbine generators fixed to the seabed with foundations
- Two to four offshore substations fixed to the seabed with foundations
- A network of inter-array subsea cabling connecting the wind turbine generators together and to the offshore substations
- Those parts of the export subsea cables between the offshore substations to the point where they meet State waters.

The exact location and specification of turbines will be determined following site investigations, supply chain considerations and completion of further environmental assessments. For the purposes of this referral, each turbine is proposed to have a capacity between 15 MW and 20 MW, a hub height of 165 m to 190 m and a rotor diameter of between 250 m to 275 m.

The main components of the Project are illustrated in the indicative drawing below (not to scale).



Ancillary components of the project (e.g., upgraded access roads, new high-pressure gas pipeline; off-site resource processing):

Onshore

Existing port and harbour modifications

The Project would use existing port facilities in the region to support construction and operations and maintenance (O+M) activities including, but not limited to, the transport and delivery of equipment and Project components, and to facilitate the use of maintenance vessels for offshore activities. It is anticipated that the existing port(s) will require upgrades and / or expansion which will be delivered by a third party, separate to this Project, and will likely service several offshore wind projects. The port works will be subject to their own independent assessments and approvals.

Studies into suitable port facilities and port development plans are ongoing, with the following ports currently being investigated, but not limited to, to support the Project (subject to various port upgrades as required) - Barry Beach Marine Terminal, Port Anthony, Port of Hastings, Port of Geelong and Bell Bay.

Requirements for the port facility include:

- Being in proximity to the offshore wind farm to enable efficient transportation, installation and construction activities
- Having sufficient water depth to facilitate a variety of construction and / or operation vessels
- Having adequate quayside facilities to enable construction and installation activities including sufficient bearing capacity, vehicle parking, offices, refuelling and waste handling etc.
- Having sufficient land availability nearby to enable construction laydown areas, assembly, storage and potentially manufacturing of Project components
- Having capacity to facilitate marine transportation volumes proposed for the Project and adequate staffing / ability to supply additional workforce from local / regional community.

It is noted that the State Governments *Offshore Wind Implementation Statement 1* (October 2022) states that the Port of Hastings is likely to be the preferred port to support offshore wind construction, subject to the necessary community and industry consultation and environment and planning approvals.

Onshore transport will be primarily associated with the movement of workers and construction of the transmission line. The Project will use existing public roads, access points and intersections, however where necessary, upgrades will be undertaken to accommodate construction vehicles. These would be subject to identification through further environment and transport assessment, consultation with private landowners and Councils (if affecting public land).

Offshore

The following offshore ancillary devices are required for the Project for safety purposes or to obtain further data to inform design and approvals. The number and location of these will be confirmed during development of the Project, however, it is anticipated that these will be located predominantly in Commonwealth waters, but also in State waters, to ascertain conditions for the export cables:

- Metocean measurement devices including wave buoys and floating Light Detection and Ranging (LiDAR) equipment
- Ecological monitoring devices including buoyed acoustic monitoring equipment
- Safety aids to navigation such as safety buoys.

Alongside a referral for the Project (EPBC number 2022/09379), a separate referral under the EPBC Act has been prepared for the geophysical marine activities required for the Project during the assessment stage to inform the approvals (EPBC number 2022/09374). This includes devices indicated in the list above. An EPBC referral for geotechnical and other intrusive investigations is also currently being prepared and is expected to be lodged in Q4 2022 / Q1 2023.

Key construction activities:

- Construction program (start and end date, duration)
- Key stages of construction and methodologies for each main Project component onshore and offshore

Construction of the onshore and offshore components is expected to start in 2027 and take approximately 2 years each (overlapping), with an overall duration of approximately 2 years.

Pre-construction works will be required both offshore and onshore including vegetation clearance, potential relocation of services and seabed preparation.

Onshore Transmission line

Construction activities associated with the onshore transmission line would include:

- Removal, destruction and lopping of native and non-native vegetation
- Construction and use of access tracks and laydown areas for construction and / or maintenance
- Establishment of site offices and operations and maintenance buildings
- Site preparation for the pylons, assembly of a temporary crane, installation / pouring of the foundations and assembly of the pylons (for overhead configuration)
- Trenching and horizontal directional drilling activities for laying underground cabling (for an underground configuration)
- Excavation of transition pits and temporary storage of excavated materials
- Civil and electrical works at the point of interconnection to the grid, with works dependent on the exact location and existing infrastructure
- Progressive rehabilitation of the sites and landscaping

Substation and subsea cable crossing

Construction activities associated with the onshore substation and subsea cabling would include:

- Landfall of the offshore export cable and connection to the transition joint bay would involve either horizontal directional drilling) or trenching
- Laying and burying of underground cable from the shore landing to the substation indicatively shown at Giffard (construction methodology of cable trenching or boring, subject to further technical feasibility and environmental studies)
- Construction of the onshore substation would require general civil works including site preparation, pouring of concrete foundations, assembly of the structure (will require temporary cranes), fit out and installation of electrical items.

Offshore

Subsea export cabling would be the only infrastructure located in Victorian waters. Construction activities associated with the offshore subsea cabling would include:

- Trenching of the seabed to allow for the laying of subsea export cables
- Laying and burying (trenching) or mechanical protection of the subsea export cables

Key operational activities:

The operational life of the Project is indicatively 40 years, which aligns with the Commercial Licence duration proposed under the Commonwealth *Offshore Electricity Infrastructure Act 2021*. During this period, the operational activities would include:

- Operation and maintenance of the onshore infrastructure including the onshore substation, overhead transmission line and underground cable
- Operation and maintenance of the offshore infrastructure including the offshore wind turbines generators, foundations, offshore substations and subsea cables.
- The use and maintenance of buildings and facilities associated with the Project such as a marine coordination centre (expected to service several offshore wind projects) will likely be located at the main port. As noted earlier, there are a number of ports being investigated for this role
- Ongoing environmental management and monitoring in accordance with approval conditions which may involve onshore and offshore activities.

Key decommissioning activities (if applicable):

Decommissioning activities are not all known at this stage but will be further refined as the Project development progresses and licensing and financial security is set under the Commonwealth *Offshore Electricity Infrastructure Act 2021*. Consultation with the transmission operator and regulator towards the end of the Project life would be undertaken to discuss potential further use.

The following activities are proposed at the end of the operation phase:

- Removal of offshore structures (WTGs and substations) above the seabed (within Commonwealth jurisdiction)
- Offshore cabling (inter-array and export cables) both buried and mechanically protected are likely to be left in situ to avoid impacts to the environment
- Onshore underground cables would also potentially be left in the ground with cable end cut, sealed and buried as a precautionary measure
- Overhead transmission lines (towers, cables) and substation components would be dismantled and repurposed where possible
- Areas of hard standing onshore such as near the substation would be remediated

Is the project an element or stage in a larger project?

No Yes If yes, please describe: the overall project strategy for delivery of all stages and components; the concept design for the overall project; and the intended scheduling of the design and development of project stages).

The Project onshore and offshore elements are proposed to be delivered as one whole. Therefore, for completeness this referral describes all Project components including those in Commonwealth jurisdiction. It is noted, however, that this referral only relates to those Project components within the Victorian jurisdiction (land and water). It is also noted that the preferred transmission route option is G-REZ, which is being delivered by AusNet.

The Project has been referred in parallel to the Commonwealth under the EPBC Act to consider the potential for significant impacts to matters of national environmental significance onshore and offshore including in Commonwealth waters.

Is the project related to any other past, current or mooted proposals in the region?

No Yes If yes, please identify related proposals.

The Project is exploring opportunities for collaboration with other renewable energy developers in the region on the potential to share common infrastructure and reduce potential environmental effects, such as the development of transmission infrastructure.

The preferred option for the onshore overhead transmission route is to use shared infrastructure via G-REZ (Option 1a). G-REZ consists of a new collector hub (the proposed Giffard Terminal Station) and a 500 kV transmission line proposed to run from the substation indicatively shown at Giffard to the existing Hazelwood Terminal Station. However, as G-REZ is yet to be approved, two additional transmission line options (1b and 2) have been identified in this referral.

The Project may result in commercial relationships with other projects however, the Greater Gippsland Offshore Wind Project is an independent Project and not dependent on other projects proceeding. Synergies will continue to be investigated where they offer mutual benefit and / or improved environmental and social outcomes.

What is the estimated capital expenditure for development of the project?

The Project has an estimated capital expenditure of USD \$5.2 billion based on USD \$2.5 million / MW.

4. Project alternatives

Brief description of key alternatives considered to date (e.g. locational, scale or design alternatives. If relevant, attach A4/A3 plans):

Alternative offshore sites

Various potential offshore wind sites within Australia have been identified and explored by the Proponent. Within the south-east region of Victoria, several options were considered along the Gippsland 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 constraints.

The current site off the Gippsland coastline was selected due to the following:

- The limited number of communities and properties overlooking the adjacent coastline
- Options for an onshore landing for the subsea cabling
- Capacity for the transmission grid connection point and transmission route options (including shared infrastructure routes)
- Greater potential generation capacity (MW) with scope to extend further seaward if required
- Preferable water depths providing reduced associated construction costs

Turbine layout

The preliminary design for the offshore wind farm component of the Project consisted of 85 turbines covering an area of approximately 475 km². The findings of several desktop assessments undertaken for the Project resulted in the turbine layout being revised to avoid on-site constraints as well as extend the offshore wind farm boundary further seaward to increase the generating capacity of the Project.

The turbine layout was revised to avoid the following constraints:

- Four oil and gas perch well platforms (two decommissioned and two active), all of which require a 500 m exclusion zone
- A gas pipeline that extends from one of the perch wells to the shoreline near Seaspray. This pipeline has a 500 m exclusion zone
- The Tasmanian Gas Pipeline which has a 500 m exclusion zone
- Basslink which has a 500 m exclusion zone
- The SS Glenelg shipwreck which has a 500 m exclusion zone.

The revised turbine layout now consists of 139 turbines over an area of approximately 700 km² (refer to **Figure 2 (Project Area) in Attachment 1**). The final location of the turbines is dependent on the location of the declared zone and the feasibility licence issued by the Commonwealth Government as well as the outcomes of the detailed environmental assessments.

Alternative onshore transmission infrastructure

Two potential shoreline crossing points for the subsea cabling have been identified and are being considered for the Project. Further information on these is provided below.

Brief description of key alternatives to be further investigated (if known):

Alternative shoreline crossing

The Project is currently considering two potential shoreline crossings. These will be subject to further investigations and environmental assessments to determine the preferred option. Ecological site surveys are planned for late 2022 / early 2023 to groundtruth the desktop studies and habitat map from the cable landing to the substation, indicatively shown at Giffard, to help inform the options assessment.

Option 1 - As shown on **Figure 2 in Attachment 1**, this option shows an undersea cable connecting the offshore substations landing at a single point at McLoughlins Beach – Seaspray Coastal Reserve, directly northeast of the Ninety Mile Beach Marine National Park (not intersecting the Marine Park). An underground cable would then run inland to the north of Lake Denison to the proposed substation.

Option 2 - As shown on **Figure 2 in Attachment 1**, this option shows an undersea cable connecting the offshore substations landing at a single point at McLoughlins Beach – Seaspray Coastal Reserve, directly west of the Ninety Mile Beach Marine National Park (not intersecting the marine park). An underground cable would then run inland northwest-bound to the proposed substation.

Construction activities associated with the offshore subsea cabling would include:

- Trenching of the seabed to allow for the laying of subsea export cables
- Laying and burying (trenching) or mechanical protection of the subsea export cables
These cables will be either under bored or trenched between the offshore environment and the new substation. The use of horizontal directional drilling is the preferred method of construction, but the ultimate method will depend on the outcome of further environmental investigations.

Alternative onshore transmission infrastructure

The overall electrical concept design of the wind farm is still under development. Therefore, the options shown here are preliminary. The electrical design selected will consider proven design from operational offshore wind projects overseas, whilst considering the local environmental and grid connection context. In addition, as noted above, the transmission line options nominated as part of the Project were identified prior to release of Implementation Statement 1 and accordingly the grid connection may be subject to further review and consideration.

The Project is considering opportunities to share transmission infrastructure. Two potential onshore overhead 500 kV transmission line routes and the proposed new onshore substation location will be subject to further detailed design investigations and environmental assessments.

Option 1a – proposes the use of the 85 km long G-REZ, which connects from the substation indicatively located at Giffard to the Hazelwood Terminal Station switchyard. As G-REZ is subject to separate assessment and approval, two other options have also been considered.

Option 1b – proposes a dedicated transmission line for the Project following the same 85 km route as outlined for G-REZ connecting into the Hazelwood Terminal Station switchyard.

Option 2 – proposes a dedicated transmission line for the Project, approximately 65 km long and located mostly alongside the existing Basslink, connecting into the Loy Yang Power Station switchyard.

Turbine generating capacities

Typical offshore wind turbines currently have a generating capacity of 10 MW. The next generation of offshore wind turbines will increase to 15 MW for installation in 3 to 5 years and it is expected that even larger turbines will be introduced over this time, potentially up to 20 MW.

As technology progresses, the Project will seek to utilise the latest offshore wind turbine options available. Therefore, for the purposes of this referral, offshore turbine generators with a capacity of up to 20 MW will be considered as alternatives for the Project. The final offshore wind turbine model / technology will be determined prior to construction and as well as commercial and supply chain considerations.

For the foundation substructures, a number of potential concepts are being evaluated. This includes for example monopiles, pre-piled jackets, suction bucket jackets and / or gravity base foundations.

The final turbine model selected will also inform the number of turbines proposed as well as the wind farm layout. Larger turbines with a greater generation capacity may result in fewer turbines and an alternative layout for the offshore wind farm. Using a smaller number of larger turbines with a greater generation capacity may also result in other environmental benefits (such as reduced seabed foundations required). Turbines with a greater hub height allows for a larger passage underneath the turbine blades for birds to pass through safely. Larger turbines also move slower, which may reduce the potential for collision risk with birds that fly through the area. The potential mitigation effects of this requires further detailed investigation and will be considered during the assessment phase of the Project.

Port options

Port options for servicing the Project during construction, operation and decommissioning are continuing to be investigated and refined.

The Project would use existing port facilities in the region to support construction and operations and maintenance (O+M) activities including, but not limited to, the transport and delivery of equipment and Project components, and to facilitate the use of maintenance vessels for offshore activities. Studies into suitable port facilities and port development plans are ongoing, with the following ports currently being investigated to support the Project (subject to various port upgrades required). These include, but are not limited to, the Barry Beach Marine Terminal, Port

Anthony, Port of Hastings, Port of Geelong as well as Bell Bay in Tasmania. It is noted that the State Governments *Offshore Wind Implementation Statement 1* (October 2022) states that the Port of Hastings is likely to be the preferred port to support offshore wind construction, subject to the necessary community and industry consultation and environment and planning approvals.

It is anticipated that the existing port(s) will require upgrades and / or expansion which will be delivered by a third party, separate to this Project, and will likely service several offshore wind projects. The port works will be subject to their own independent assessments and approvals.

5. Proposed exclusions

Statement of reasons for the proposed exclusion of any ancillary activities or further project stages from the scope of the project for assessment:

The Project is proposed in State and Commonwealth waters (see **Figure 2** and **3** in **Attachment 1**). Direct impacts of the wind turbine generators and offshore cables that are located within the Commonwealth jurisdiction are excluded from this referral and will be subject to separate assessment under the *EPBC Act 1999*.

Indirect impacts experienced within State waters and land, that are associated with Project components located in Commonwealth waters, are addressed in this referral under the *Environment Effects Act 1978* (e.g., visual amenity impacts, water quality impacts and underwater noise impacts).

Works associated with non-intrusive investigations considered to have no significant effect on the environment have also been excluded from this referral, including activities such as:

- Works associated with investigating, testing, and surveying the on and offshore environment associated with designing the Project
- Service proving to identify third party assets
- LiDAR onshore and offshore data collection
- Works at existing terminal stations and switchyards where planning permission is not required
- Removal, destruction or lopping of vegetation, including native vegetation where required.

These investigations are required to inform Project design, to secure all necessary statutory approvals for the Project and to prepare the land for the construction of the project and therefore will proceed ahead of the main Project being referred within this application.

6. Project implementation

Implementing organisation (ultimately responsible for project, i.e.. Not contractor):

Greater Gippsland OWP Project Pty Ltd.

Implementation timeframe:

The onshore construction will commence first, currently targeting starting Q3 2027. It will take 1-2 years and will be overlapping with the offshore construction.

The offshore construction will likely last approximately 2 years, with earliest start Q1 2028. To the extent it is possible, the offshore construction will be scheduled in the summer months, when weather is favourable.

A key driver of the programme will be the grid connection and the establishment of the full end-to-end electrical system. Once the offshore substations have been energised, the commissioning of the wind turbines can commence.

The exact programme will need to be developed, subject to various Project aspects, but as an example:

- Year 1 may typically include all the onshore civil and electrical works and possibly also installation of the offshore foundations and / or offshore substations
- Year 2 may typically include energisation of the offshore substations, installation of the array cables and installation and commissioning of the wind turbines
- Further development of the construction phasing will occur as additional technical studies are completed, commercial viability and supply chain tested, and impact assessments undertaken.

Proposed staging (if applicable):

N/A

7. Description of proposed site or area of investigation

Has a preferred site for the project been selected?

No Yes If no, please describe area for investigation.
If yes, please describe the preferred site in the next items (if practicable).

General description of preferred site, (including aspects such as topography/landform, soil types/degradation, drainage/ waterways, native/exotic vegetation cover, physical features, built structures, road frontages; attach ground-level photographs of site, as well as A4/A3 aerial/satellite image(s) and/or map(s) of site & surrounds, showing project footprint):

The Project Area as shown in **Figure 2** in **Attachment 1**, reflects the Project infrastructure footprint for which approval will be sought. The desktop environmental assessments applied a Study Area which extends beyond the Project Area to provide additional context and to create flexibility should the Proponent choose to relocate the Project within this Study Area.

The Study Area, as applied to the assessments can be defined as:

- Onshore – an extension of 1 km either side of the transmission line, substation or underground cable (centre point)
- Offshore – an extension of 5 km from the Project Area including turbines, substation and export cables

Onshore

The onshore Study Area extends along the coastline from McGaurans Beach up to Seaspray, and then extends north-west inland towards either the Hazelwood Terminal Station (option 1a and b) or Loy Yang Power Station (option 2). Land within the onshore Study Area is in a predominantly rural setting, comprising agricultural land and forest plantations, with the overhead transmission

line corridor following either G-REZ or the existing Basslink easement (see **Figure 4** in **Attachment 1**).

The onshore Study Area lies within the Gippsland Plain Bioregion which occurs between the eastern shore of Port Phillip Bay and extends to the Gippsland Lakes near Lakes Entrance (excluding Wilsons Promontory). This bioregion is characterised by flat to slightly undulating coastal plains occurring from the coastline and inland to an elevation of 200 m. Although, native vegetation within the bioregion has been significantly cleared, with very high clearing rates in the western parts near Melbourne, extensive areas remain within primarily public land including Gippsland Lakes Coastal Park, Holey Plains State Park, Ninety Mile Beach Marine National Park, Giffard (Rifle Range) Flora Reserve and Stradbroke Flora and Fauna Reserve (see **Attachment 2**). The extent and quality of native vegetation present within the Study Area has not yet been determined through field investigations however, preliminary desktop mapping of Ecological Vegetation Classes (EVCs) identified 19 EVCs are located within the Study Area (see **Figure 9** in **Attachment 1**). Desktop searches also identified 58 flora species and 100 fauna species under the *Flora and Fauna Guarantee Act 1988* are likely to occur in the Study Area (see **Figures 12-14** in **Attachment 1**).

Over 300 wetlands are modelled within the Study Area including two internationally important Ramsar wetlands (Gippsland Lakes and Corner Inlet); two waterbodies of regional significance (Jack Smith Lake and Lake Denison); and several DELWP mapped wetlands (see **Figure 17** in **Attachment 1**).

The onshore Study Area is located within the Central Gippsland catchment system (See **Figure 17** in **Attachment 1**), with majority of the transmission line option 1a and 1b (and the western extent of option 2) located within tributaries of the Latrobe River including Bennetts Creek, Traralgon Creek and Flynns Creek (see **Attachment 3**). The eastern end of transmission line route option 1a and 1b and majority of transmission line route option 2, is located within the catchment system for Merriman Creek and drains towards the east, discharging into McLoughlins Beach. This catchment system is part of the larger Seaspray catchment system.

Transmission line route option 1a and 1b intersects with 13 main watercourses - Bennetts Creek, Waterhole Creek, Plough Creek, Boyds Creek, Traralgon Creek, Sheepwash Creek, Flynns Creek, Blind Joe Creek, Crooke Creek, Deep Creek, Carr Creek, Merriman Creek and Monkey Creek, and minor unnamed watercourses. Transmission line route option 2 intersects with five main watercourses - Flynns Creek, Merriman Creek, Bayliss Gully, Monkey Creek and Little Monkey Creek. The drainage lines to these watercourses flow in a general northerly direction, with Merriman Creek flowing east, through the Study Area.

Landforms that occur within the Study Area include coastal and dune complexes, plains, low hills and large coastal / near-coastal waterbodies such as Lake Denison and Lake Reeve. A review of Victorian soil type mapping (Agriculture Victoria, 2000 and 2003) indicates that the transmission line routes vary between multiple soil types (see **Attachment 4**). The main soil types and definitions found in the Study Area are as follows:

- Gf – Giffard Soil Type: Level plain landform with a geology of late tertiary deposits. Dominant soils are sandy loams to loamy sands and clay subsoils
- Go - Gormandale Soil Type: Dunefield with a geology of pleistocene to recent aeolian sediments. Dominant soils are podosols / sandy rudosols and some sodosols (very deep sandy)
- La – La Trobe River Soil Type: Floodplain with a geology of recent sediments from the La Trobe River. Dominant soils are deep loams to clay loams with medium clays at depth
- Ly – Loy Yang Soil Type: Undulating plain with geology of alluvial sediments. Dominant soils are sandy loams to sandy clay loams overlying medium to heavy clays
- Ma – Maryvale Soil Type: Rolling low hills to undulating rises with a geology of late tertiary sediment (Pliocene) Dominant soils are fine sandy loams on a clay subsoil
- Sd - Stockdale Soil Type: Undulating plain with a geology of tertiary sediments. Dominant soils are variable: grey and brown solodols / kurosols / chromosols (sandy)
- Sd/Gf – Stockdale with Giffard Soil Types
- Sd/Go – Stockdale with Gormandale Soil Types

- Wd – Woodside Soil Type: Gently undulating plain with a geology of mostly Pleistocene alluvium, some areas of recent alluvium and recent aeolian sediments. Dominant soils are sands and loams on sandy clays or medium clays
- Yn – Yinnar Soil Type: Stagnant alluvial plain with a geology of late Pleistocene alluvial sediments. Dominant soils are fine sandy loams to silty clay loams overlying light to medium clays.

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 **Figure 19 in Attachment 1**).

Australian Soil Resource Information System (ARIS) Atlas of Australian Acid Sulfate Soils (AAASS) mapping indicates the potential for acid sulfate soil occurrence is a low probability (with very low confidence) across most of the onshore Study Area. Along the coastal area of the Study Area, ARIS AAASS mapping indicates the potential for acid sulfate soil occurrence is extremely low probability (with very low confidence) with some areas of high probability (with very low confidence) surrounding Lake Denison (see **Figure 20 in Attachment 1**). The Seaspray township is mapped as having low probability (with moderate confidence) of acid sulfate soil occurrence.

Offshore

State waters within the offshore Study Area have a water depth ranging between zero and approximately 20 m. The subsea cabling options traverse the Ninety Mile Beach biounit, either side of the Ninety Mile Beach Marine National Park. The nearshore environment along the coastline is homogenous, and is mapped as soft substrate, with no visible biota (see **Attachment 5**). There is some seagrass and macroalgae to the south-east of the Study Area, and within the Ninety Mile Beach Marine National Park. Small areas of 'corals' or 'reefs' are indicated to the north and east of the Study Area, but not within the Study Area itself.

Wind speeds in the offshore Study Area are in the range of 10 to 30 km an hour, with maximum gusts reaching 100 km an hour (see **Attachment 5**). The wind direction is predominantly westerly during winter and easterly during summer. Temperatures in subsurface waters range from about 13°C in August / September and 16°C in February / March. Tidal movements are predominantly in a northeast-southwest orientation. Generally, the area is a high energy environment, exposed to frequent storms and significant wave heights.

More broadly, Bass Strait is characterised by shallow water and weak tidal currents in comparison to surrounding marine environments. Due to the shallow depths, waters warm and cool more rapidly than surrounding waters. While there is a slow easterly flow of waters in Bass Strait, there is also a large anti-clockwise circulation.

The following marine habitats may occur in the offshore Study Area (within State waters):

- Subtidal soft sediments
- Sandy beaches
- Intertidal seagrass
- Intertidal sand and mud flats
- Mangroves and saltmarshes
- Subtidal nearshore rocky reefs with kelp, other macroalgae and epifauna
- Seagrass meadows.

Site area (if known): ...NA..... (hectares)

Onshore Study Area: 34,017 ha
 Offshore Study Area: 147,817 ha

Route length (for linear infrastructure)65 - 85..... (km). The length of the alignment and development footprint will be calculated once a preferred corridor is selected.

Consistent with what has been proposed by AusNet for G-REZ, the easement associated with the 500 kV transmission line is expected to be between 80 m and up to 100 m wide in sections for construction purposes. A final easement width will be set for the purpose of ongoing maintenance and operational activities based on the final design. Construction areas that extend beyond the easement will be required in areas for temporary laydown and access requirements. An easement

can only be applied to private land – in these circumstances, the easement would be a private agreement between the landowner and the Proponent (as opposed to a regulatory easement).

The form of agreement to identify infrastructure on public land will be determined in consultation with DELWP and is dependent on the tenure of the land. The Proponent has been working with DELWP to identify the relevant tenure and the relevant form of agreement.

Current land use and development:

Refer to **Attachments 2, 4 and 5** in this section.

Onshore

As shown on **Figure 4** in **Attachment 1**, the onshore Study Area and surrounding area is in a predominantly rural setting. Land uses within the onshore Study Area and surrounds are predominantly agriculture and forestry plantation, with areas of State forest, parks and reserves. The onshore Study Area also encompasses part of the Seaspray township, which is located adjacent to the cable landing option 1. The transmission route option 1a and 1b is located to the south of the Rosedale township.

The underground cabling options for the transmission line will cross the shoreline beneath the McLoughlins Beach – Seaspray Coastal Reserve, either to the north and south of the Ninety Mile Beach Marine National Park. This reserve is public land used for conservation and recreation purposes.

Transmission route option 1a and 1b heads north through freehold agricultural land, crossing the Merrimans Creek Water Frontage, until it reaches public plantation land. Option 1a and 1b then travel west through various freehold and public plantation and agricultural landholdings, as well as bordering the Holey Plains State Park, until it reaches the Hazelwood Terminal Station switchyard. Transmission route option 2 crosses freehold agricultural land until it meets the Giffard Plantation. From there, the primary land use for the transmission route option 2 is a combination of agricultural land and plantation sites (both public and freehold), however it also covers some areas of conservation reserves and State forests until it reaches the connection point at the Loy Yang Power Station switchyard.

The Study Area does not contain significant urban development and has a low population density. Transmission route option 1a and 1b has been sited to avoid Seaspray, Stradbroke, Longford, Rosedale, Flynn, Traralgon, and ends to the south of Hazelwood North, and north of the Churchill township. The most densely populated area within the Study Area is Seaspray on the coast and Hazelwood in the east, with small clusters of residential dwellings also near Hiamdale, Gormandale and Loy Yang in the western end of the transmission route option 2 (refer to **Figure 5** in **Attachment 1**).

The transmission route option 1a and 1b crosses Giffard Road in the east, up to Rosedale Longford Road to the north, follows Princes Highway west past Rosedale, and travels south along Hazelwood Road. The main arterial roads that intersect with the transmission route option 1a and 1b are South Gippsland Highway, Seaspray Road and Hyland Highway. The Study Area also intersects with a number of other local roads including Giffard Road which is a sealed road that runs north to south, and Gormandale-Stradbroke Road which runs east to west through the Study Area. Gormandale-Stradbroke Road is predominantly a sealed road, however, a section of it is unsealed where it intersects with the Study Area east of the Willung township. A number of other local roads in the area, particularly through plantations are unsealed roads.

As shown in **Figure 4** in **Attachment 1**, transmission route option 2 runs parallel to Basslink, Basslink lands at McGaurans Beach just south of the Ninety Mile Beach Marine National Park, then travels underground for 6.4 km to a transition bay, where it transitions to an overhead transmission line and travels for 60.8 km where it connects into the Loy Yang Power Station switchyard (Basslink, 2022).

Offshore

State waters within and surrounding the offshore Study Area contain a number of commercial fisheries including the eastern rock lobster zone, the central and eastern abalone zone, one Lake Tyers bait licence, scallop fishery and ocean fishery.

A number of commercial fisheries also exist within the Commonwealth waters of the offshore Study Area and nearby surrounding area including:

- Southern Eastern Scalefish and Shark Fishery
- The Bass Strait Central Zone Scallop Fishery
- The Small Pelagic Fishery
- Eastern Skipjack Tuna Fishery
- Eastern Tuna and Billfish Fishery

Recreational activities offshore of the East Gippsland region include recreational fishing, diving, and boating. There is a boat ramp at McLoughlin Beach however most recreational fishers would likely concentrate in the lakes and estuaries which can be fished from smaller vessels. The Gippsland Lakes are a popular recreational fishing location, and the sandy beaches along the Ninety Mile Beach serve as important recreational fishing spots both nearshore at reefs and further out to sea in open water. The Ninety Mile Beach National Marine Park is located within the offshore Study Area and is used for swimming, surfing, boating, snorkelling and diving.

The Gippsland region offers a variety of marine-based tourism opportunities including diving, charter boat cruises, whale and wildlife watching, sailing, snorkelling, surfing, and kayaking. The Gippsland Lakes and Lakes Entrance are the closest key tourist destination and the closest hub for marine-based tourism activities. Holiday accommodation is provided in coastal settlements, as well as several campsites north and south of the Study Area along the coastline including McGaurans Beach, Jack Smith Lake Camping Area and the Gippsland Lakes Coastal Park campground.

There are four perch wells within the centre of the offshore Study Area (within Commonwealth waters) that are operated by Esso. Currently, two of the wells have been decommissioned, whilst the remaining two are inactive, but are yet to be decommissioned (NOPSEMA, 2022). These wells currently have a 500 m exclusion zone around the platforms. Esso's Management Plan lodged with NOPSEMA indicates that decommissioning is likely to commence in 2025.

Two major existing pipelines traverse the offshore Study Area; the Tasmanian Gas Pipeline and the pipeline from the Esso Perch wells to Seaspray. There is a 500 m exclusion zone around both pipelines at present; the Esso pipeline is not currently in use and may be either remediated or removed completely over the next 5 -10 years.

Description of local setting (e.g. adjoining land uses, road access, infrastructure, proximity to residences & urban centres):

Described under 'Current Land Use and Development' above.

Planning context (e.g. strategic planning, zoning & overlays, management plans):

The onshore component of the Project is primarily located within the municipal boundary of the Shire of Wellington, with the western end of the overhead transmission line located within the City of Latrobe at the grid connection point. The Project is therefore subject to the provisions of the Wellington and Latrobe Planning Schemes (the Planning Schemes).

The Planning Schemes set out the relevant planning policies that a responsible authority must consider when administering the use and development of land.

Planning Policy Framework

The Planning Policy Framework (PPF) is the policy content of the Planning Schemes and is presented in a three-tier integrated policy structure as follows:

- **State-wide (S):** State policies that apply in all planning schemes in Victoria
- **Regional (R):** Regional policies that apply to planning schemes based on geographic and thematic policy groupings
- **Local (L):** Local policies that apply in an individual local planning scheme.

The state policies within the PPF clauses that are most relevant to the Project are listed below:

- **Clause 11 Settlement**
 - Clause 11.01-1S Settlement – Victoria
 - Clause 11.03-4S Coastal settlement
- **Clause 12 Environmental and Landscape Values**

- Clause 12.01-1S Protection of biodiversity
- Clause 12.01-2S Native vegetation management
- Clause 12.02-1S Protection of the marine and coastal environment
- Clause 12.02-2S Marine and coastal Crown land
- Clause 12.03-1S River corridors, waterways, lakes, and wetlands
- Clause 12.05-1S Environmentally sensitive areas
- Clause 12.05-2S Landscapes
- **Clause 13 Environmental Risks and Amenity**
 - Clause 13.01-1S Natural hazards and climate change
 - Clause 13.01-2S Coastal inundation and erosion
 - Clause 13.02-1S Bushfire planning
 - Clause 13.03-1S Floodplain management
 - Clause 13.04-1S Contaminated and potential contaminated land
 - Clause 13.04-2S Erosion and landslip
 - Clause 13.04-3S Salinity
 - Clause 13.05-1S Noise management
 - Clause 13.06-1S Air quality management
 - Clause 13.07-1S Land use compatibility
- **Clause 14 Natural Resource Management**
 - Clause 14.01-1S Protection of agricultural land
 - Clause 14.02-1S Catchment planning and management
 - Clause 14.02-2S Water quality
 - Clause 14.03-1S Resource exploration and extraction
- **Clause 15 Built Environment and Heritage**
 - Clause 15.01-6S Design for rural area
 - Clause 15.03-1S Heritage conservation
 - Clause 15.03-2S Aboriginal cultural heritage
- **Clause 17 – Economic Development**
 - Clause 17.01-1S Diversified economy
 - Clause 17.01-2S Innovation and research
 - Clause 17.04-1S Facilitating tourism
 - Clause 17.04-2S Coastal and maritime tourism and recreation
- **Clause 18 Transport**
 - Clause 18.01-2S Transport system
 - Clause 18.02-4S Roads
 - Clause 18.02-5S Freight
 - Clause 18.02-6S Ports
- **Clause 19 Infrastructure**
 - Clause 19.01-1S Energy supply
 - Clause 19.01-2S Renewable energy

The regional policies in the PPF in the Wellington and Latrobe Planning Schemes relevant to the Project are listed below:

- **Clause 11.01-1R** Gippsland
- **Clause 12.03-1R** High value water body assets – Gippsland
- **Clause 14.01-1R** Protection of agricultural land – Gippsland
- **Clause 14.03-1R** Resource exploration and extraction – Gippsland Coal Resource
- **Clause 17.01-1R** Diversified economy – Gippsland
- **Clause 17.01-2R** Innovation and research – Gippsland
- **Clause 17.01-1R** Tourism – Gippsland
- **Clause 18.01-2R** Transport system – Gippsland
- **Clause 18.02-5R** Freight links – Gippsland

The local policies in the PPF of Wellington Planning Scheme most relevant to the Project are listed below:

- **Clause 21.01 – Municipal Strategic Statement**
 - Clause 21.01-2 Environment and Landscape Values
 - Clause 21.01-3 Environmental Risks
 - Clause 21.01-4 Natural Resource Management
 - Clause 21.01-5 Built Environment and Heritage
 - Clause 21.01-6 Economic Development
 - Clause 21.01-7 Transport
- **Clause 21.02 Key Issues and Influences**
 - Clause 21.02-2 Environment and Landscape Values
 - Clause 21.02-3 Environmental Risks
 - Clause 21.02-4 Natural Resource Management
 - Clause 21.02-5 Built Environment and Heritage
 - Clause 21.02-6 Economic Development
 - Clause 21.06-7 Transport
- **Clause 21.03 Vision – Strategic Framework**
 - Clause 21.03-01 Vision
 - Clause 21.03-2 Strategic Framework Land Use Plan
- **Clause 21.12 Coastal Settlement Boundary Plan**
 - Clause 21.12-3 Ninety Mile Beach – Area between Golden Beach and The Honeysuckles
- **Clause 21.13 Environment and Landscape Values**
 - Clause 21.13-1 Rural and Natural Landscapes
 - Clause 21.13-2 Biodiversity
 - Clause 21.13-3 Coastal Landscape Character and Significance
 - Clause 21.13-4 Specific Character Areas - Ninety Mile Coast (Character Area 6.2)
- **Clause 21.14 Environmental Risk**
 - Clause 21.14-1 Climate Change Impacts
 - Clause 21.14-2 Fire
 - Clause 21.14-3 Flooding
 - Clause 21.14-4 Salinity and Land Degradation
- **Clause 21.15 Natural Resource Management**
 - Clause 21.15-1 Water
 - Clause 21.15-3 Coal Resources
 - Clause 21-15-4 Wellington Coal Fields
 - Clause 21-15-5 Urban Coal Buffer
- **Clause 21.16 Built Environment and Heritage**
 - Clause 21.16-2 Heritage
- **Clause 21.17 Economic Development**
 - Clause 21.17-1 Industry, Retail and Commerce
 - Clause 21.17-2 Agriculture
 - Clause 21.17-3 Timber
 - Clause 21.17-4 Aviation
 - Clause 21.17-5 Tourism
- **Clause 21.18 Transport**
 - Clause 21.18-5 General
 - Clause 21.18-2 Road Infrastructure
- **Clause 22.01** Special Water Supply Catchment Policy
- **Clause 22.02** Rural Policy
- **Clause 22.03** Heritage Policy
- **Clause 22.06** Coal Resources Policy
- **Clause 22.07** Coal Buffer Policy
- **Clause 22.08** Ninety Mile Beach Policy

The policies of local significance within the PPF of Latrobe Planning Scheme that are most relevant to the Project are listed below:

- **Clause 12.01-1L** Protection of biodiversity
- **Clause 12.03-1L** River corridors and waterways
- **Clause 13.02-1L** Planning in the Bushfire Management Overlay
- **Clause 13.02-1L** Bushfire prone areas
- **Clause 13.03-1L** Floodplain management
- **Clause 14.01-1L** Protection of agricultural land

Land Use Terms

In accordance with **Clause 73.03** (Land Use Terms) of the Planning Schemes, the onshore transmission line and substation are defined as a *utility installation*:

'land used:

- a) *for telecommunications;*
- b) **to transmit or distribute gas, oil or power;**
- c) *to collect, treat, transmit, store, or distribute water; or*
- d) *to collect, treat, or dispose of storm or flood water, sewage, or sullage.*

It includes any associated flow measurement device or a structure to gauge waterway flow.'

As no portion of the wind turbines used to generate power are located on land, the land use term relating to wind energy facilities is not relevant to this Project.

Planning Zones and Overlays

The zones and overlays that apply to each transmission route are listed in **Table 3** and shown in **Figure 6, Figure 7** and **Figure 8 of Attachment 1**.

Table 3: Planning Zones and Overlays

Planning Control	Description	Transmission routes	
		1a and b	2
Wellington Planning Scheme			
Planning Zones			
Clause 35.07 – Farming Zone (FZ)	The majority of the onshore Study Area is located within the FZ.	✓	✓
Clause 36.01 – Public Use Zone (PUZ1 – Service and Utility)	This zone intersects with the option 1a and 1b at the northern boundary of Holey Plains State Park.	✓	
Clause 36.01 – Public Use Zone (PUZ6 – Local Government)	This PUZ relates to local government public land use and intersects with the option 1a and 1b at the northern boundary of Holey Plains State Park.	✓	
Clause 36.02 – Public Park and Recreation Zone (PPRZ)	Small sections of the onshore Study Area are within the PPRZ, at the eastern boundary of Mullungdong State Forest and in the western end of option 2. There is also a small section of land in the PPRZ intersected with the option 1 over Rosedale Racecourse and Reserve.	✓	✓
Clause 36.03 – Public Conservation and Resource Zone (PCRZ)	Sections of the Study Area are located within the PCRZ. This includes the McLoughlins Beach – Seaspray Coastal Reserve, Lake Denison Wildlife Reserve, Giffard (Rifle Range) Flora Reserve, Mullungdong State Forest, Holey Plains State Park, Stradbroke Flora and Fauna Reserve, Gormandale Flora Reserve and Merrimans Creek Water Frontage.	✓	✓

Clause 36.04 – Transport Zone 2 (Principal road network) (TRZ2)	The TRZ2 covers South Gippsland Highway, Rosedale-Longford Road, and Hyland Highway within the Study Area. These roads are managed by the Department of Transport.	✓	✓
Clause 36.04 – Transport Zone 3 (Significant municipal road) (TRZ3)	The TRZ3 covers Gormandale-Stradbroke Road, Giffard Road, Willung Road which is located within the central and western sections of the onshore Study Area. These roads are managed by the Shire of Wellington.	✓	✓
Planning Overlays			
Clause 42.01 – Environmental Significance Overlay (Schedule 1 - Coastal and Gippsland Lakes Environs) (ESO1)	The onshore Study Area is affected by ESO1 along the shoreline where the underground cabling meets the shoreline. The ESO1 identifies the significance of the coastal and Gippsland Lakes environs.		✓
Clause 42.01 – Environmental Significance Overlay (Schedule 3 - Urban and Construction Buffer) (ESO3)	ESO3 applies to land to the south of Rosedale.	✓	
Clause 42.01 – Environmental Significance Overlay (Schedule 7 - Landfill Buffer) (ESO7)	ESO7 applies to land to the south of Rosedale.	✓	
Clause 42.01 – Environmental Significance Overlay (Schedule 2 - Wetlands) (ESO2)	ESO2 applies to land small areas of land associated with wetlands.	✓	✓
Clause 43.02 – Design and Development Overlay (Schedule 6 - RAAF Building Height above 15 metres) (DDO6)	DDO6 affects the transmission route option 1 in the north-east. A permit is required for buildings and works with a height greater than 15 m.	✓	
Clause 44.03 – Floodway Overlay (FO)	The onshore Study Area is affected by small areas of FO associated with Lake Denison and Merrimans Creek.	✓	✓
Clause 44.04 – Land Subject to Inundation Overlay (LSIO)	The onshore Study Area is affected by small areas of LSIO associated with Merrimans Creek.	✓	✓
Clause 44.06 – Bushfire Management Overlay (BMO)	Almost the entire onshore Study Area is affected by the BMO.	✓	✓
Clause 44.07 – State Resource Overlay (Schedule 1 - Gippsland Brown Coalfields) (SRO1)	The onshore Study Area is affected by the SRO1 which identifies the significance of the Gippsland Coalfields.	✓	✓
Clause 45.12 – Specific Controls Overlay (Schedule 2 - Basslink – Land Use and Development Controls (2002)) (SCO2)	The majority of the onshore Study Area is affected by the SCO2 associated with the Land Use and Development Controls (2002) incorporated document.	✓	✓
Latrobe Planning Scheme			
Planning Zones			
Clause 35.03 – Rural Living Zone Schedule 1 (RLZ1)	The transmission route option 1a and 1b intersects with an area of RLZ1 associated with Hazelwood North.	✓	
Clause 35.07 – Farming Zone – Schedule 1 (FZ1)	The western end of transmission route option 1a, 1b and 2 is located within FZ1 as it enters the Latrobe LGA.	✓	✓
Clause 36.01 – Public Use Zone (PUZ1)	This zone applies at the northern boundary of Holey Plains State Park.	✓	

Clause 37.01 – Special Use Zone (Schedule 1 – Brown Coal) (SUZ1)	The western end of transmission routes are located within SUZ1 where they near Loy Yang Power Station and Hazelwood Terminal Station.	✓	✓
Clause 36.04 – Transport Zone 2 (Principal Road network) (TRZ2)	The TRZ2 covers Hyland Highway, Bartons Lane, Mattingley Hill Road, Sanders Road, Hazelwood Road, Firmans Lane, Tramway Road, to the north of Loy Yang Power Station. These roads are managed by the Department of Transport.	✓	✓
Planning Overlays			
Clause 42.01 – Environmental Significance Overlay (Schedule 1 – Urban Buffer) (ESO1)	ESO1 is associated with the urban protection buffer for the adjacent coal mine at Loy Yang Power Station.	✓	
Clause 43.02 – Design and Development Overlay (Schedule 1 – Major Pipeline Infrastructure) (DDO1)	The north-western corner of the transmission route option 1a and 1b intersects with this DDO1. A permit is required for all buildings and works in excess of 10 m in height within this overlay	✓	
Clause 43.02 – Design and Development Overlay (Schedule 11 - Latrobe Regional Airport – Obstacle Height Area no. 4, 5 and 6) (DDO11)	The transmission route option 1 intersects with this DDO11.	✓	
Clause 44.03 – Floodway Overlay (FO)	The FO affects Bennetts Creek just north of the Hazelwood Terminal Station.	✓	
Clause 44.04 – Land Subject to Inundation Overlay (LSIO)	The onshore Study Area is affected by LSIO associated with Traralgon Creek for option 1a and 1b and Flynn's Creek for option 2.	✓	✓
Clause 44.06 – Bushfire Management Overlay (BMO)	The onshore Study Area is affected by the BMO.	✓	✓
Clause 44.07 – State Resource Overlay – (Schedule 1 - Gippsland Brown Coalfields) (SRO1)	The onshore Study Area is affected by the SRO1 which identifies the significance of the Gippsland Brown Coalfields.	✓	✓
Clause 45.12 – Specific Controls Overlay (Schedule 4 - Loy Yang Power Station & Coal Mine Incorporated Document (April 2020)) (SCO4)	A small area of Study Area is affected by the SCO4 associated with the Loy Yang Power Station & Coal Mine Incorporated Document (April 2020).		✓

Particular Provisions

The following particular provisions are likely to, or have potential to apply to the Project, subject to further investigation and detailed design:

- **Clause 52.02 – Easements, restrictions, and reserves**

The clause seeks to enable the removal and variation of an easement or restrictions to enable a use or development that complies with the planning scheme after the interests of affected people are considered.

- **Clause 52.05 – Signs**

The clause seeks to regulate the development of land for signs and associated structures, and to ensure signs are compatible with the amenity and visual appearance of an area. Zone provisions specify the category of sign control that applies to the zone.

- **Clause 52.09 – Extractive Industry and Extractive Industry Interest Areas:** This clause seeks to ensure that use and development of land for extractive industry does not adversely affect the environment or amenity of the area during or after extraction, that excavated areas can be appropriately rehabilitated and that that stone resources, which may be required by

the community for future use, are protected from inappropriate use and development. The clause applies to an application to use or develop land within an Extractive Industry Interest Area; or within 500 m of an existing or proposed extractive industry operation. Applications in this land must be referred to Secretary to the Department administering the *Mineral Resources (Sustainable Development) Act 1990*.

- **Clause 52.17 – Native vegetation**

This clause seeks to ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation, by applying the three-step approach in accordance with the native vegetation guidelines (avoidance of impact, minimisation of impacts, and provision of offsets). This clause requires a planning permit to remove, destroy or lop native vegetation, including dead native vegetation.

- **Clause 52.29 – Land adjacent to principal road network**

This clause seeks to ensure appropriate access to the Principal Road Network or land planned to form part of the Principal Road Network. This clause applies to land adjacent to a road in the Transport Zone 2.

- **Clause 53.02 Bushfire Planning**

This clause seeks to ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire; to ensure that the location, design and construction of development appropriately responds to the bushfire hazard; and to ensure development is only permitted where the risk to life, property and community infrastructure from bushfire can be reduced to an acceptable level.

Operational Provisions

In accordance with Clause 72.01-1 (Minister is Responsible Authority), the Minister for Planning is the responsible authority for the use and development of land for a:

- *Utility installation used to:*
 - a) transmit or distribute electricity.**
 - b) Store electricity if the installed capacity is 1 megawatt or greater.**

Management Plans

- Gippsland Regional Growth Plan (2014) provides broad direction for land use and development across the Gippsland region. It translates and integrates emerging state-wide regional land use planning policy and provides a basis for regional coordination and future planning of infrastructure to support regional land use objectives.

Coastal planning documents that are relevant to the Project include:

- Coastal Spaces Landscape Assessment Study, Municipal Reference Document 2006
- Coastal Spaces Landscape Assessment Study, State Overview Report 2006
- Integrated Coastal Planning for Gippsland – Coastal Action Plan, Gippsland Coastal Board
- Siting and Design Guidelines for Structures on the Victorian Coast, 1998
- The Victorian Marine and Coastal Policy (DELWP, 2020) provides an overarching framework and sets out policies for planning and managing the marine and coastal environments in Victoria.
- The Victorian Marine and Coastal Strategy (DELWP, 2022) supports sustainable use and improvements to how we manage the health of the marine and coastal environment.
- The Gippsland Regional Coastal Plan (2015 – 2020) provides a regional framework for protecting Gippsland's coastal values.

Local government area(s):

Wellington and Latrobe

8. Existing environment

Overview of key environmental assets/sensitivities in project area and vicinity

(cf. general description of project site/study area under section 7):

Preliminary desktop environmental assessments have been undertaken to characterise the existing baseline environment of the Study Area, identifying assets and sensitivities which may influence design or to be considered in the assessment of potential impacts associated with construction, operation, and decommissioning of the Project. A number of desktop technical assessments have also been undertaken to inform this impact identification and screening, as well as support the preparation of this referral.

The following reports provide further information on the existing environment within the Study Area and are included for consideration as attached to this referral:

- Attachment 1 – Referral figures
- Attachment 2 – Preliminary Desktop Biodiversity Constraints Assessment (Biosis, 2022)
- Attachment 3 – Preliminary Desktop Hydrology Constraints Assessment (Umwelt, 2022)
- Attachment 4 - Summary of Impacts Report (Umwelt, 2022)
- Attachment 5 - Preliminary Desktop Marine Environmental Assessment (BMT, 2022)
- Attachment 6 – Preliminary Desktop Cultural Heritage Constraints Assessment (Umwelt, 2022)
- Attachment 7 – Social Risks and Opportunities Analysis (Umwelt, 2022)
-

Onshore

The onshore Study Area lies within the Gippsland Plain Bioregion which is characterised by flat to slightly undulating coastal plains occurring from the coastline and inland to an elevation of 200 metres. The extent of native vegetation within the Project Area has not been determined, however preliminary desktop mapping of EVCs identified 19 EVCs are located within the Study Area, as shown in **Figure 9 of Attachment 2**. Most of the onshore Study Area is cleared agricultural land which holds limited ecological value, however higher quality native vegetation is likely to be present within the reserves and parks throughout the Study Area on public land including Gippsland Lakes Coastal Park, Holey Plains State Park, Ninety Mile Beach Marine National Park, Giffard (Rifle Range) Flora Reserve and Stradbroke Flora and Fauna Reserve. Desktop searches also identified 58 flora species and 100 fauna species listed under the *Flora and Fauna Guarantee Act 1988* as likely to occur in the Study Area.

To inform this referral, a Preliminary Desktop Biodiversity Assessment was undertaken by Biosis (July 2022), as provided in **Attachment 2**.

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. Holey Plains State Park and Gippsland Lakes Coastal Park are both protected under the *National Parks Act 1975*. Other reserves of high ecological value include Lake Denison Wildlife Reserve, Giffard (Rifle Range) Flora Reserve, Mullundung State Forest, Stradbroke Flora and Fauna Reserve, and Merrimans Creek Flora Reserve. The two subsea cabling options cross the shoreline at McLoughlins Beach – Seaspray Coastal Reserve, which is public land used for conservation and recreation purposes.

Landforms that occur within the Study Area include coastal and dune complexes, plains, low hills and large coastal / near-coastal waterbodies such as Lake Denison and Lake Reeve. The Ninety Mile Beach is backed by dunes forming a coastal barrier which is critical in protecting the coastal plain from marine erosion and inundation. The coastal habitat at the Ninety Mile Beach is a highly dynamic environment which may not be suitable to all shorebird species. However, while it is unlikely that this area will support a high diversity and abundance of shorebirds, there are several migratory species which are known to utilise this area. In addition, the sandy beaches also provide habitat for some resident shorebirds.

As shown in **Figure 10 in Attachment 1**, the Study Area includes two internationally important Ramsar wetlands (Gippsland Lakes and Corner Inlet) two waterbodies of regional significance (Jack Smith Lake and Lake Denison); and several DELWP mapped wetlands.

Many of the wetlands and waterways in the Study Area are of high value to a range of shorebirds and other wetland birds. In particular, the Gippsland Lakes Ramsar site (which intersects with the northern boundary of the Study Area) provides important habitat for numerous resident and migratory shorebirds. In addition, Lake Denison and Jack Smith Lake are areas of regional significance and provides important seasonal habitat for a number of migratory shorebirds. Wetlands and surrounding waterways throughout the Study Area also provide habitat for a range of ichthyofauna and other aquatic species.

The onshore Study Area falls within the jurisdiction of one Registered Aboriginal Party (RAP), the Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC) which is the representative of the Gunaikurnai People. There are 157 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), Aboriginal ancestral remains (burials), object collections and scarred trees. There are also multiple areas of cultural heritage sensitivity within the Study Area.

Offshore (State and Commonwealth waters)

The Ninety Mile Beach biounit extends along the coastline within the offshore Study Area (see **Figure 2** in **Attachment 1**) and includes the Ninety Mile Beach Marine National Park. The park covers approximately 2,750 ha and is reserved under the *National Parks Act 1975*. It is known for the diverse benthic subtidal marine life that inhabit the sandy environment including crustaceans and molluscs. No Project infrastructure will be located within the national park.

That part of the offshore Study Area that falls within the territorial waters of Victoria falls within the RAP jurisdiction of GLaWAC, which is representative of the Gunaikurnai People. There are also multiple areas of cultural heritage sensitivity within the offshore part of the Study Area.

The nearshore environment along the coastline is homogenous, and is mapped as soft substrate, with no visible biota. There is some seagrass and macroalgae to the south-east of the Study Area, and within the Ninety Mile Beach Marine National Park. Small areas of 'corals' or 'reefs' are indicated to the north and east of the Study Area, but not within the Study Area itself.

The offshore Study Area is nominated to be a Biologically Important Area (BIA) for the following species:

- Sharks: nursery / breeding area for the White Shark (*Carcharodon carcharias*)
- Whales: foraging habitat for Pygmy Blue Whale (*Balaenoptera musculus brevicauda*), migration and resting areas for Southern Right Whale (*Eubalaena australis*)
- Seabirds: Short-tailed Shearwater (*Ardenna tenuirostris*), Wandering Albatross (*Diomedea exulans*), White-faced Storm-petrel (*Pelagodroma marina*), Common Diving-Petrel (*Pelecanoides urinatrix*), Buller's Albatross (*Thalassarche bulleri*), Shy Albatross (*Thalassarche cauta cauta*), Indian Yellow-nosed Albatross (*Thalassarche chlorohynchus*), Black-browed Albatross (*Thalassarche melanophris*) and Campbell Albatross (*Thalassarche melanophris impavida*).

A BIA is an indication that an area has a high level of importance for a species, either threatened or migratory under the EPBC Act. BIAs are typically areas where aggregations of individuals of a species are known to display biologically important behaviour such as breeding, foraging, resting, or migrating.

To inform this referral, a preliminary desktop marine environmental assessment was undertaken by BMT (July 2022), as provided in **Attachment 5**.

9. Land availability and control

Is the proposal on, or partly on, Crown land?

No Yes If yes, please provide details.

It should be noted the onshore Study Area does not represent the Project Area (infrastructure footprint). The Study Area expands beyond the Project Area to allow for flexibility in Project design, as different transmission route options are being considered and assessed further. However, placement of onshore infrastructure and transmission route options would look to avoid Crown land as far as reasonably practicable.

There are several areas of Crown land located within the onshore Study Area. These are primarily parks and reserves, and forestry plantations, as shown in **Figure 4 of Attachment 1**. In addition to these areas are road reserves which are not shown.

A summary of Crown land within the Study Area is provided in Error! Reference source not found..

Table 4: Crown land within the Study Area

Name	Description	Managing Agency and Legislation
Ninety Mile Beach Marine National Park	Located between the shoreline and the 3 nautical mile point within the offshore Study Area and has an area of approximately 2,750 ha. It is known for the diverse benthic subtidal marine life that inhabit the sandy environment including crustaceans and molluscs. The subsea cable will pass within proximity of but outside the bounds of the park.	Reserved under the <i>National Parks Act 1975</i> and managed by Parks Victoria.
McLoughlins Beach – Seaspray Coastal Reserve	Located within the Seaspray Coastal Reserve. Both subsea cabling options will be located beneath the reserve.	Unreserved Crown land Managed by Parks Victoria.
Seaspray Public Purposes Reserve	Located along the coastline of the Seaspray township, adjacent to the McLoughlins Beach – Seaspray Coastal Reserve.	Reserved under the <i>Crown Land (Reserves) Act 1978</i> and managed by Committees of Management.
Lake Denson Wildlife Reserve	Located onshore behind Ninety Mile Beach Marine National Park. It is a hunting reserve that provides valuable habitat for water birds and covers approximately 80 ha.	Reserved under the <i>Crown Land (Reserves) Act 1978</i> and managed by Parks Victoria.
Giffard Plantation	Located adjacent to the indicative location of the new substation and intersects with transmission route options 1a and 1b and 2. It is a softwood plantation covering approximately 2,150 ha in size.	Crown land vested in the Victorian Plantations Corporation under the <i>Victorian Plantations Corporations Act 1993</i> perpetually licenced to Hancock Victorian Plantations to use and manage as a plantation.
Giffard (Rifle Range) Flora Reserve	Located adjacent to Giffard Plantation, it is a nature conservation reserve that covers approximately 510 ha.	Reserved under the <i>Crown Land (Reserves) Act 1978</i> and managed by Parks Victoria.
Mullundung State Forest	Located adjacent to Giffard Plantation and Giffard (Rifle Range) Flora Reserve and covers approximately 13,800 ha. Comprises landscape-lowland forest and heathy woodland. It supports representative flora and fauna species for these types of forests and threatened species.	Unreserved Crown land managed by DELWP.
Stradbroke Flora and Flora	Located adjacent to Mullundung State Forest. It is a nature conservation reserve covering approximately 2,300 ha.	Reserved under the <i>Crown Land (Reserves) Act 1978</i> and managed by Parks Victoria.
DELWP Plantations	There are areas of DELWP Plantations in the eastern end of the transmission route options 1a and 1b and in the western end of option 2 to the east and south of Willung.	Unreserved Crown land managed by DELWP.

Merrimans Creek Water Frontage	A natural features reserve that extends east to west between transmission route options 1a and 1b and 2. It intersects with option 1a and in the eastern end and intersects with the western end of option 2.	Unreserved Crown land managed by DELWP.
Merrimans Creek Flora Reserve	A nature conservation reserve located adjacent to the water frontage and to the west of Willung.	Reserved under the <i>Crown Land (Reserves) Act 1978</i> and managed by Parks Victoria.
Holey Plains State Park	Located between transmission route options 1a and 1b and 2.	Reserved under the <i>National Parks Act 1975</i> and managed by Parks Victoria.
Gormandale Flora Reserve	A nature conservation reserve intersected by transmission route option 2 in the western end and is surrounded by plantations.	Unreserved Crown land managed by Parks Victoria.
Unnamed State Forest land	Parcels located adjacent to DELWP Plantations in the western end of transmission route option 2, and adjacent to Holey Plains State Park within the transmission route options 1a and 1b.	Unreserved Crown land managed by DELWP.
Flynns Creek Water Frontage	Located along the border of the Wellington and Latrobe LGAs.	Unreserved Crown land managed by DELWP.
Loy Yang B Power Station Site	Located at Loy Yang Power Station, at the end of the transmission route option 2.	Unreserved Crown land managed by the Department of Treasury and Finance.
Switching Yard Loy Yang A Power Station	Located at Loy Yang Power Station, at the end of the transmission route option 2.	Unreserved Crown land managed by DELWP.
Monash Way Plantations	Located adjacent to the Hazelwood Terminal Station.	Unreserved Crown land, some parcels managed by DELWP, and some parcels managed by Department of Treasury and Finance.
Traralgon Creek Water Frontage	Located south of the Traralgon township.	Partly unreserved Crown land, and partly reserved the <i>Crown Land (Reserves) Act 1978</i> . Managed by DELWP.
Former Sand, Gravel and Rubbish Depot	Located adjacent (west) to Holey Plains State Park.	Reserved under the <i>Crown Land (Reserves) Act 1978</i> and managed by Committees of Management and Council.
Rosedale Racecourse and Recreation Reserve	Located south of the Rosedale township.	Reserved under the <i>Crown Land (Reserves) Act 1978</i> and managed by Committees of Management and local government.
Various Crown land parcels	Several small parcels of Crown land associated with services and utilities, water and sewerage, and channels near the Holey Plains State Park.	Unreserved Crown land managed by relevant statutory authority.
Crook Creek Frontage	Located north of Holey Plains State Park within transmission route option 1a and 1b.	Unreserved Crown land managed by DELWP.
Gippsland Lakes Coastal Park	Located north of the Seaspray township on the border of the Study Area. The Joint Management Agreement in place over the park provides for the joint management by the Gunaikurnai with the State. The park has been granted as Aboriginal Title to the GLaWAC but is leased back to the State and jointly managed.	Reserved under Schedule 3, Part 3 of the <i>National Parks Act 1975</i> and managed by Parks Victoria and the Gunaikurnai people under a Joint Management Plan developed under a Traditional Owner Land Management Agreement, which was negotiated under the <i>Conservation, Forests and Lands Act 1987</i> and the <i>Traditional Owner Settlement Agreement Act 2010</i> .

The Crown land parcels directly affected will be confirmed during the detailed design phase, and the relevant agreements, leases or licenses sought.

Current land tenure (provide plan, if practicable):

Current land tenure within the onshore Study Area is a mixture of Crown land and freehold land.

Intended land tenure (tenure over or access to Project land):

It is likely most of the onshore Project components will be predominantly located within freehold land. Freehold land required for the Project will be secured through commercial agreements negotiated with relevant landholders.

Should the Project be located within any areas of Crown land, relevant licences, leases or permits would be sought to secure tenure following confirmation of planning approval for the Project.

Compliance with the *Native Title Act 1993* (Cth) or the *Traditional Owner Settlement Act 2010* (Vic) (if a Land Use Activity Agreement is in place at the relevant time) is also likely to be required for the grant of any rights and interests over Crown land.

In addition, a lease or licence will be established with the State to allow occupation of the seabed within Victorian coastal waters once planning approval has been obtained.

Land and / or facilities required for port operations will be leased or licensed directly from port operators during the relevant phases of the Project.

Other interests in affected land (eg. easements, native title claims):

Both the onshore and offshore Study Area intersect with a number of easements, including oil and gas pipelines and transmission lines.

There are two major existing pipelines through the offshore Study Area: the Tasmanian Gas Pipeline and the oil pipeline from the Esso Perch wells to Seaspray. These are managed and regulated under the *Pipelines Act 2005* and the Pipeline Regulations 2017. There is a 500 m exclusion zone around both pipelines at present; the Esso pipeline is not currently in use and may be either remediated or removed completely over the next 5-10 years.

The overhead transmission line will extend north-west inland towards either the Hazelwood Terminal Station switchyard or Loy Yang Power Station switchyard. The transmission line lands at McGaurans Beach just south of Ninety Mile Beach Marine National Park, where an underground cable will run approximately 5 km from the coast to a new substation. The overhead transmission line corridor will follow either G-REZ or Basslink. A transmission line easement will be required for all options which will include land required for the transmission infrastructure plus ongoing maintenance and operations including access tracks. The average easement width for a double circuit 500 kV transmission line is expected to be 80 to 100 m. The infrastructure within the easement is largely overhead electricity transmission with earth return and fibre optic cable suspended in catenary (the curve that a hanging cable assumes under its own weight).

The onshore Study Area is located within the following areas of Native Title (as shown on **Figure 11** in **Attachment 1**):

- Parts of the Study Area fall within the boundaries of the existing Gunai / Kurnai People native title determination (National Native Title Tribunal No. VCD2010/001), for which the registered native title body corporate (RNTBC) is the Gunaikurnai Land and Waters Aboriginal Corporation RNTBC (GLaWAC)
- Parts of the Study Area overlap with a registered Indigenous Land Use Agreement (ILUA), the Gunaikurnai Settlement ILUA (Tribunal No. VI2010/003) however, this ILUA is not relevant to the Project.

10. Required approvals

State and Commonwealth approvals required for project components (if known):

Commonwealth

- Referral under the EPBC Act for a decision as to whether the Project is a 'controlled action' requiring approval and assessment under the EPBC Act. Alongside a referral for the Project (EPBC number 2022/09379), a separate referral under the EPBC Act has been prepared for the geophysical marine activities required for the Project during the assessment stage to inform the approvals (EPBC number 2022/09374). This includes devices indicated in the list above. An EPBC referral for geotechnical and other intrusive investigations is also currently being prepared and is expected to be lodged in Q4 2022 – Q1 2023.
- The Project will require the following licences and approvals under the *Offshore Electricity Infrastructure Act 2021*:
 - A **feasibility licence** which authorises the licence holder to assess the feasibility of a proposed commercial offshore infrastructure project and subsequently apply for a commercial licence for the project. Feasibility licences can only be granted in a declared area.
 - If feasibility activities include the construction, installation, commissioning, operation, maintenance or decommissioning of offshore renewable energy infrastructure as defined under this Act, a management plan is required to be approved by the Regulator before licence holders can commence those feasibility activities.
 - A **management plan** needs to be submitted by the feasibility licence holder and assessed and approved by the Regulator before a commercial licence can be granted under this Act. Management plans are required for the construction, installation, operation, maintenance and decommissioning of offshore renewable energy infrastructure and offshore electricity transmission infrastructure.
 - A **commercial licence** enables a licence holder to carry out an offshore infrastructure project (commercial project) in the licence area for the purpose of exploiting renewable energy resources. A commercial licence can only be granted to the holder of a feasibility licence and can only be granted within an area that is a declared area.
 - A **transmission and infrastructure licence** is required under this Act to provide for the licence holder to assess the feasibility and to store, transmit, or convey electricity or a renewable energy product in, or through, the licence area.
- Compliance with the *Native Title Act 1993* for the grant of any permits, approvals or other rights and interests over areas where native title has been determined to exist in favour of the Gunai / Kurnai People (unless a Land Use Activity Agreement under the *Traditional Owner Settlement Act 2010* is in place – see further below)
- Permit under the *Underwater Cultural Heritage Act 2018* may be required to interfere or damage underwater cultural heritage

Victorian

- Planning Scheme Amendment (PSA) to the Wellington and Latrobe Planning Scheme for the use and development of the onshore transmission infrastructure, native vegetation removal and associated activities under the *Planning and Environment Act 1987*
- Cultural Heritage Management Plan (CHMP) under the *Aboriginal Heritage Act 2006*
- Compliance with any Land Use Activity Agreement that is negotiated by the State with GLaWAC under the *Traditional Owner Settlement Act 2010* for the grant of rights and interests over Crown land (which would replace any compliance requirements under the *Native Title Act 1993*)
- Consent for works on marine and coastal Crown land under the *Marine and Coastal Act 2018*, including investigations and laying of the cable
- 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 (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

Have any applications for approval been lodged?

No Yes If yes, please provide details.

Two referrals under the EPBC Act have been lodged. Alongside a referral for the Project (EPBC number 2022/09379), a separate referral under the EPBC Act has been prepared for the geophysical marine activities required for the Project during the assessment stage to inform the approvals (EPBC number 2022/09374).

Approval agency consultation (agencies with whom the proposal has been discussed):

Commonwealth

- National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)
- National Offshore Petroleum Titles Administrator (NOPTA)
- Department of Climate Change, Energy, the Environment and Water (DCCEEW)

State

- Department of Environment, Land, Water, and Planning (DELWP) Impact Assessment, Planning and Gippsland Regional officers
- GLaWAC
- West Gippsland Catchment Management Authority
- First Peoples – State Relations
- Heritage Victoria
- Environment Protection Agency
- Department of Transport, including Ports Victoria
- Latrobe Shire Council
- Wellington Shire Council
- South Gippsland Shire Council
- East Gippsland Shire Council
- Parks Victoria
- Country Fire Authority

Other agencies consulted:

- Department of Jobs, Precincts, and Regions (DJPR)
- Latrobe Valley Authority
- Australian Energy Market Operator (AEMO)
- AusNet

Other organisations consulted:

- Department of Treasury and Finance (DTF) – Invest Victoria
- Port of Hastings Authority – Port of Hastings
- Port Anthony – Port Anthony Terminal

- Qube Holdings - Barry Beach Marine Terminal
- Port of Geelong
- Port of Portland
- TasPorts - Bell Bay
- CarbonNet
- Committee for Gippsland
- Bluescope Steel

Further information about the consultation undertaken are provided in Section 20.

PART 2 POTENTIAL ENVIRONMENTAL EFFECTS

11. Potentially significant environmental effects

Overview of potentially significant environmental effects (identify key potential effects and comment on their significance and likelihood, as well as key uncertainties):

A preliminary impact identification and screening has been undertaken to identify potential impacts associated with the construction, operation, and decommissioning of the Project, as presented in **Attachments 1-7** (as listed in **Section 8** of this referral). The assessments will also inform design, development and identification of the environmental studies, including field studies, required to inform the assessment and approvals of the Project.

Marine - Attachment 5

This assessment provides an overview of the existing marine environmental conditions and preliminary impact assessment.

This referral addresses the marine environment in Victorian waters between the shoreline and three nautical miles from the shoreline, known as the offshore Study Area. The marine environment in Victorian waters includes a range of benthic habitats, and fish, marine reptiles, mammals, invertebrates and bird species. The potential significant impacts to Commonwealth waters have also been assessed in the marine report (**Attachment 5**) and included in the referral under the EPBC Act, submitted to DCCEE (EPBC number 2022/09379).

The Study Area extends over the Ninety Mile Beach National Marine Park. The purpose of this park is to protect its unique sandy environment, which supports significant diversity of marine invertebrates (reported as one of the highest in the world), which in turn supports marine fauna including white shark and coastal habitat for shorebirds such as the threatened hooded plover. The final Project Area will not impact on the park.

There are 15 EPBC Act and 22 FFG Act listed marine fauna species that are likely to occur within the offshore Study Area. The FFG Act listed species likely or possible to occur in the offshore Study Area include 4 Whales, Dolphins and Seals, 1 Turtle, 4 Sharks and Fish and 13 Marine Benthic Species (see **Table 10** in **Section 12** of this referral).

There are significant vessel movements from the Port of Corner Inlet and Port Albert and Lakes Entrance through the offshore Study Area (upwards of 35,000 vessels per year), which are mostly recreational and commercial vessels. The offshore Study Area also supports recreational activities such as fishing, diving and boating. A boat ramp is located at McLoughlins Beach.

During the construction, operation and decommissioning phases of the Project, there is potential for impacts to the marine environment within Victorian waters including:

- Potential fauna strike with vessels
- Habitat loss or disturbance from installation of the subsea export cable (buried or not) and cable landing at the shoreline
- Increased turbidity and suspended sediment from cable burying or shore landing works
- Displacement of marine fauna due to habitat disturbances such as underwater noise, lights during works, vessel disturbance and potential electromagnetic field (EMF)
- Changes to marine community composition due to introduced invasive marine species
- Disruption to existing marine recreation and commercial activities such as shipping and navigation, tourism and fishing.

Potential indirect effects from Project infrastructure in Commonwealth waters primarily relate to impacts on FFG Act-listed species from collision, displacement or barrier effects for bird species from offshore turbines, changes to the wave regime and coastal processes near offshore infrastructure, changes to water quality from spills or discharges from vessels and impacts from artificial lighting on marine and bird species.

Further marine studies will be undertaken to map the benthic habitat, obtain metocean data and undertake marine fauna surveys to inform a detailed impact assessment and design development.

Terrestrial Biodiversity - Attachment 2

This report provides an overview of the baseline conditions of the terrestrial environment within the onshore Study Area. Based on database and mapping searches, records of flora and fauna within the Study Area were identified and an assessment of their likelihood of occurring was undertaken.

Field studies to ground-truth the findings of the desktop assessment will commence in Spring / Summer 2022-2023 to map the extent and quality of habitats and confirm the presence or absence of particular species. These will then be used to inform the study program moving forward.

Native Vegetation

The Project lies within the Gippsland Plain bioregion. Up to 19 EVCs have been identified within the Study Area including seven EVCs with a Bioregional Conservation Status (BCS) of Endangered, eight EVCs with a BCS of Vulnerable and one EVC with a BCS of depleted (refer to **Figure 9 of Attachment 1**). The EVCs include forest, woodland, grassland, wetland, scrub and saltmarsh communities.

The modelled area of the following four EVCs combined represents approximately 75% of the native vegetation extent within the Study Area:

- 35% EVC 16 – Lowland Forest
- 23% EVC 48 – Heathy woodland
- 9% EVC 3 – Damp Sands Herb-rich Woodland
- 8% EVC 191 – Riparian scrub

The majority of the native vegetation within the Study Area is located on public land designated for nature reserves, coastal parks, State Parks and the Ninety Mile Beach National Park (up to the high water mark for onshore vegetation).

The primary impacts on native vegetation will be direct, through vegetation clearing to facilitate the construction and operation of the onshore transmission assets (overhead line, substation and underground cable). Vegetation removal will be required in areas within the Project Area where groundworks are required for the construction of Project infrastructure or laydowns / tracks to facilitate the works. Construction methods have not been confirmed for the onshore Project components, so further investigation will occur to identify opportunities to avoid and minimise vegetation removal. The extent of vegetation clearance required will be determined once the final alignment is confirmed and associated construction footprint is specified.

The exact location and extent of FFG Act listed ecological communities and species will be determined through field surveys and other studies as required. The outcomes of the surveys will inform design development and the assessment of potential impacts. Endangered, vulnerable, sensitive or isolated vegetation types will be avoided through detailed design to minimise the overall impact of the Project.

The principles set out in the *Guidelines for the removal, destruction or lopping of native vegetation* (Guidelines) (DELWP, 2017) will be applied to first avoid, then minimise and finally consider offsets for any native vegetation removal on the Project. A 100 m wide corridor is anticipated for the transmission line to allow for construction and associated activities. The final transmission easement will be located within this corridor. Any native vegetation losses will be offset in accordance with the Guidelines.

Threatened Flora

The report identified 62 threatened flora species with a medium to high likelihood of occurring within the Study Area. Of these, 15 flora species are listed under the EPBC Act and 58 flora species are listed under the FFG Act (these do not equal 62 as some species are listed under both Acts). Threatened flora records within 10 km of the Study Area are shown in **Figure 12 of Attachment 1** (See **Table 6 of Section 12** of this referral).

An ecological site inspection and targeted surveys are required to confirm the presence of these flora species. **Appendix 1 of Attachment 2** contains the FFG Act listed flora species with a medium to high likelihood of occurring within the Study Area.

Areas of greatest value for threatened flora include:

- Giffard (Rifle Range) Flora Reserve: known to support populations of / and suitable habitat for species such as Dwarf Kerrawang *Commersonia prostrata* (EPBC EN)
- Stradbroke Flora and Fauna Reserve and surrounding reserves: known to support populations of / and suitable habitat for species including Golden Grevillea *Grevillea chrysophaea* (FFG vu)
- Wetlands, lakes and waterways including Merriman Creek, Kangaroo Creek and Monkey Creek: likely to support habitat for species including River Swamp Wallaby-grass *Amphibromus fluitans* (EPBC vu), Yarra Gum *Eucalyptus yarraensis* (FFG cr) and Swamp everlasting *Xerochrysum palustre* (EPBC VU, FFG cr).

There are a number of range-restricted flora species such as the Gippsland Lakes Peppermint *Eucalyptus arenicola* (FFG e). The Study Area is also likely to contain disjunct populations of several threatened flora species such as Rush Lily *Sowerbaea juncea* (FFG vu) and Dusky Violet *Viola fuscoviolacea* (FFG en).

Due to the large number of FFG Act listed flora species and the breadth of habitats that these species occupy throughout the Study Area, it is likely that several of these species will need to be considered further. Detailed assessments including field surveys will be undertaken to determine the extent of each species.

As with native vegetation, the main potential impact to threatened flora will be from the removal of vegetation during groundworks to facilitate the construction of the onshore Project components such as transmission tower bases and the substation. Works may also include construction laydown areas and access tracks. The outcomes of field surveys and further impact assessments on threatened flora will recommend design measures, such as micro-siting, to avoid impacts. Construction methodologies are yet to be confirmed and will be further investigated to reduce flora impacts where possible.

Other potential impacts include sedimentation to watercourses and wetland areas, altering the water quality and turbidity resulting in indirect impacts to the flora located there. Potential impacts from the introduction and spread of weed, pests and pathogens by the Project will also be considered further. Construction and operation management plans will be developed to control and minimise or remove the risk of these impacts occurring.

Threatened Fauna

The report identified 123 threatened fauna species with a medium to high likelihood of occurring within the Study Area. Of these, 57 fauna species are listed under the EPBC Act, and 100 fauna species are listed under the FFG Act (these do not equal 123 as some species are listed under both Acts). Threatened fauna records within 10 km of the Study Area are shown in **Figure 13 of Attachment 1**. An ecological site inspection and potential targeted surveys are required to confirm their presence. **Appendix 2 of Attachment 2** contains the EPBC Act and FFG Act listed fauna species likely to occur within the Study Area. See **Table 6 – 11 of Section 12** of this referral for all listed fauna including migratory species.

Threatened fauna species have the potential to be impacted during construction, operation, and decommissioning of the Project. Hollow-dependent fauna, sedentary fauna or fauna with relatively defined ecological niches or a small home-range are considered most likely to be impacted during the construction and decommissioning phase when habitat loss (including foraging or nesting habitat) is affected and disturbance are most likely due to the increased level of activity on site. Highly mobile and / or volant fauna (i.e species that can fly or glide) are most likely to be impacted during the operational phase when their aerial movements place them at risk of turbine collision.

FFG Act listed fauna species within the Study Area occupy a variety of habitats from wetlands, saltmarshes and coastal dunes, to forests, woodlands, grassland and heathlands, and open ocean.

Terrestrial Avifauna

The report identified 18 terrestrial avifauna species with a medium or higher likelihood of occurring within the Study Area. Of these, seven are listed under the EPBC Act and 16 are listed under the FFG Act (these do not equal 18 as some species are listed under both Acts). Disturbance of, or removal of habitat during construction are the most likely potential impacts. **Attachment 2** and **Table 7** in **Section 12** of this referral, contains the recorded FFG Act listed terrestrial avifauna in the Study Area.

For those avifauna that traverse the offshore Project Area during operation, there is also a risk of collision with turbines. There is also concern for terrestrial birds which are known to cross Bass Strait when moving between Tasmania and mainland Australia in large numbers at certain times of the year. FFG Act listed species of particular concern include the Orange-bellied Parrot *Neophema chrysogaster* (critically endangered), Swift Parrot *Lathamus discolor* (critically endangered) and White-throated Needletail *Hirundapus caudacutus* (vulnerable). Although rough timelines for arrival and departure have been documented, there is still a paucity of information on the migratory routes taken across the marine environment, as well as the flight heights during these large-scale movements. As such, it is not possible to discount the effects of an offshore wind project on these species, and further assessment is required.

Shorebirds, Wetland Birds and Terns

The report identified 35 listed shorebirds, wetlands birds and tern species with a medium to high likelihood of occurring within the Study Area. Of these, 11 are listed under the EPBC Act and 33 are listed under the FFG Act (these do not equal 35 as some species are listed under both Acts). **Appendix 2** of **Attachment 2** and **Table 7** in **Section 12** of this referral, contains the FFG Act listed shorebird species likely to occur within the Study Area.

Impacts are most likely to occur from construction activities impacting the integrity of surrounding wetlands and waterways, causing either sedimentation, water quality changes, direct habitat loss or disturbance.

Particular resident and migratory shorebird hotspots within the Study Area include the Gippsland Lakes and Corner Inlet, both of which are Ramsar sites and internationally recognised as an important habitat for resident and migratory shorebirds. In addition to providing important foraging habitat for over 30,000 shorebirds each year, Corner Inlet is also an important gathering site for trans-equatorial migratory shorebirds which gather in large numbers prior to departing on their northward migration. Impacts during operation from turbine collision is again a consideration although less likely since the turbine offshore location is well beyond the departure and arrival ranges of migratory shorebirds. Further studies will be undertaken to determine their extent in the Study Area.

Seabirds

The report identified 16 listed seabird species with a medium to high likelihood of occurring within the Study Area. Of these, 15 are listed under the EPBC Act and 10 are listed under the FFG Act (these do not equal 16 as some species are listed under both Acts). The Bass Strait Islands, particularly those to west and east of Wilsons Promontory, provide nesting habitat for a number of important seabird species (Schumann et al., 2014). While there are no known seabird breeding colonies within the Study Area, several breeding species are known to breed within 50 km of the Study Area, including Little Penguin *Eudyptula minor*, Short-tailed Shearwater *Ardenna tenuirostris*, Black-faced Cormorant *Phalacrocorax fuscescens*, Common Diving-Petrel *Pelecanoides urinatrix*, Fairy Prion *Pachyptila turtar*, and Pacific Gull *Larus pacificus*. **Appendix 2** of **Attachment 2** and **Table 7** in **Section 12** of this referral, contains the listed shorebird species likely to occur within the Study Area.

Seabirds are particularly at risk of turbine collision during operations. A program of seabird surveys will be conducted from early 2023 for a two-year period with monthly boat-based observation and aerial digital monitoring to capture sufficient data to inform the collision risk modelling and impact assessment. Two years of bird utilisation surveys is consistent with the *Onshore Wind Farms – interim guidance on bird and bat management* (DAWE, 2021) which state at least 24 months of site utilisation surveys must be undertaken to provide sufficient baseline data about a relevant species' potential to utilise the Project site and its surrounds. The survey guidelines for Australia's threatened birds (DEWHA, 2010) will also be used to inform the bird utilisation and monitoring program for the Project.

Other Terrestrial and Aquatic Fauna

The report identified 20 listed terrestrial and aquatic fauna species with a medium to high likelihood of occurring within the Study Area. Of these, nine are listed under the EPBC Act and 19 are listed under the FFG Act (these do not equal 20 as some species are listed under both Acts). These species include terrestrial ground-dwelling and arboreal species, and species inhabiting freshwater streams and waterbodies throughout the Study Area. **Appendix 2 of Attachment 2 and Table 8 in Section 12** of this referral, contains the listed terrestrial fauna species likely to occur within the Study Area. An initial ecological site inspection will be undertaken in Spring / Summer 2022 followed by more targeted species surveys to confirm the presence or absence of these species and map their extent within the Study Area.

Construction and operation of the Project is unlikely to pose significant direct impacts to these fauna, however indirect effects through habitat removal, disturbance, impacts from sedimentation or spills to waterbodies will require further assessment.

Removal and impact to large trees and native vegetation may impact EPBC listed arboreal species such as Southern Greater Glider *Petauroides volans* and Grey-headed Flying-fox *Pteropus poliocephalus*. Under boring or trenching activities associated with cable routing may impact the habitat of ground-dwelling fauna such as New Holland Mouse *Pseudomys novaehollandiae* and Southern Brown Bandicoot *Isodon obesulus obesulus* through habitat removal or fragmentation. Wetlands and waterways within the Study Area and surrounds are likely to provide important habitat for nationally listed amphibian and ichthyofauna populations. Any impacts to aquatic habitats associated with the works during the developmental phase (e.g. runoff, altering of the natural course of waterways, etc.) will also be taken into consideration through further assessment.

Threatened Ecological Communities (TEC)

Seven (7) FFG Act-listed TEC are likely to occur within the Study Area:

- Central Gippsland Plains Grassland Community
- Coastal Moonah (*Melaleuca lanceolata subsp. lanceolata*) Woodland Community
- Cool Temperature Rainforest Community
- Forest Red Gum Grassy Woodland Community
- Herb-rich Plains Grassy Wetland (West Gippsland) Community
- Plains Grassland (South Gippsland) Community
- Sedge Rich *Eucalyptus camphora* Swamp Community

The modelled extent of these TECs is shown in **Figure 14 of Attachment 1**. Many of the FFG listed TECs remain as small, disjunct patches of vegetation running along roadsides and between plantations. Roadside remnant vegetation can be highly diverse and plays an important role in providing biodiversity and habitat in otherwise agricultural landscapes. Despite their size, many of these remnants may be of a high quality, although there is little connectivity between them and they may be heavily degraded.

Herb-rich Plains Grassy Wetlands are modelled to occur within 10 km of the Study Area and are not considered likely to occur within the Study Area. The floodplain riparian woodland that occurs within the Study Area, however, may support Herb-rich Plains Grassy Wetlands. The modelled Forest Red Gum Grassy Woodland and Plains Grassland communities around the Loy Yang Power Station may no longer exist or be highly degraded.

The majority of the Study Area is not modelled to support any FFG Act listed TECs, apart from the Coastal Moonah Woodlands on the coastline. Field surveys will be required to ground-truth the mapped data.

Potential impacts on TECs primarily concern vegetation clearance for onshore infrastructure. The exact location and extent of FFG Act listed ecological communities and species will be determined through field surveys and other studies as required. The outcomes of these surveys will inform design development and the assessment of potential impacts. Endangered or vulnerable, sensitive or isolated vegetation types will be avoided through detailed design to minimise the overall impact of the Project.

Potentially Threatening Processes – FFG Act

Potentially threatening processes, as defined in the FFG Processes List (DELWP 2016), that are either already present or likely to be present within the Study Area and could be exacerbated by the Project are summarised below:

- Alteration to the natural flow regimes of rivers and streams
- Alteration to the natural temperature regimes of rivers and streams
- Degradation of native riparian vegetation along Victorian rivers and streams
- Habitat fragmentation as a threatening process for fauna in Victoria
- Increase in sediment input into Victorian rivers and streams due to human activities
- Input of petroleum and related products into Victorian marine and estuarine environments
- Input of toxic substances into Victorian rivers and streams
- Invasion of native vegetation by 'environmental weeds'
- Loss of hollow-bearing trees from Victorian native forests
- Spread of *Pittosporum undulatum* in areas outside its natural distribution
- The discharge of human-generated marine debris into Victorian marine or estuarine waters
- The introduction of exotic organisms into Victorian marine waters
- The spread of *Phytophthora cinnamomi* from infected sites into parks and reserves, including roadsides, under the control of a state or local government authority
- Use of Phytophthora-infected gravel in construction of roads, bridges and reservoirs
- Wetland loss and degradation as a result of change in water regime, dredging, draining, filling and grazing

A detailed assessment and field studies of FFG Act listed species and threatening processes will be undertaken and environmental management measures developed as well as the Construction Environmental Management plan (CEMP) to manage and mitigate impacts from the Project.

Cultural Heritage - Attachment 6

Aboriginal cultural heritage

This report identified 157 registered Aboriginal Places (Aboriginal cultural heritage sites registered on the Victorian Aboriginal Heritage Register (VAHR)) located in the Study Area, as shown in **Figure 15 of Attachment 1**. The places identified include artefact scatters, earth features, shell middens, low density artefact distributions (LDADs), Aboriginal ancestral remains (burials), object collections, and scarred trees. The Study Area also includes various 'areas of cultural heritage sensitivity' (areas deemed likely to hold Aboriginal cultural heritage values under the *Aboriginal Heritage Act 2006*).

There are no registered non-Aboriginal cultural heritage values within the onshore Study Area, however, there are three shipwrecks located in the offshore Study Area.

The Study Area has been used by Aboriginal people and non-Aboriginal people in various ways over a long period of time. The Study Area is likely to contain a range of non-registered Aboriginal and non-Aboriginal cultural heritage material, especially near the coastline and watercourses including the offshore area which historically would have been above-water.

Potential impacts from Project-related activities on known and / or currently unknown tangible and intangible Aboriginal cultural heritage and heritage values may occur. These are likely to include disturbance or direct impacts from groundworks such as vegetation clearance, topsoil stripping, subsoil trenching / excavation, the construction of foundations and hardstands for Project infrastructure.

Where possible, groundworks in area of cultural heritage sensitivity will be avoided or minimised. A range of construction methods (e.g. boring) will be considered to minimise impacts on Aboriginal cultural heritage places in sensitive coastal dune and beach environments at the cable landing location and at waterway crossings.

A cultural heritage management plan (CHMP) will be prepared in accordance with the *Aboriginal Heritage Act 2006* to characterise the existing environment, assess potential impacts and set out management measures to address any significant effects of the Project on Aboriginal cultural heritage. The Proponent will consult and engage closely with the RAP for the Study Area, GLaWAC, in developing the CHMP, and GLaWAC's approval of the CHMP will be required for compliance with the *Aboriginal Heritage Act 2006*.

Non-Aboriginal cultural heritage

A desktop review of historic heritage places recorded within the Study Area included a review of the Victorian Heritage Register and Inventory, National and Commonwealth Heritage Lists and Planning Scheme Heritage Overlays. No registered non-Aboriginal (historic) cultural heritage places were identified within the onshore Study Area in the desktop review. A search of the Australasian Underwater Cultural Heritage Database (AUCHD) confirmed that there are three shipwrecks of heritage value within the offshore Study Area: SS Glenelg, Magnolia and an unidentified wreck, as shown in **Figure 16 of Attachment 1**.

The SS Glenelg shipwreck has an associated 500 m exclusion zone and has therefore been mapped for design consideration. A permit is required to undertake activities within this exclusion zone that are considered prohibited conduct under the Commonwealth *Underwater Cultural Heritage Act 2018*. This includes anchoring, fishing, trawling or diving within this zone.

Hydrology - Attachment 3

This report identified that transmission route option 1 intersects with 13 main watercourses, - Bennetts Creek, Waterhole Creek, Plough Creek, Boyds Creek, Traralgon Creek, Sheepwash Creek, Flynn's Creek, Blind Joe Creek, Crooke Creek, Deep Creek, Carr Creek, Merriman Creek, Monkey Creek, as well as minor unnamed watercourses. Transmission option 2 intersects with five main watercourses - Flynn's Creek, Merriman Creek, Bayliss Gully, Monkey Creek and Little Monkey Creek. The drainage lines to these watercourses flow in a general northerly direction, with Merriman Creek flowing east, through the Study Area. **Figure 2.1 of Attachment 3** provides hydrological context to the Study Area.

Both transmission route corridors (option 1 and 2) intersect with low, moderate, and high potential Groundwater Dependent Ecosystems.

A high-level TUFLOW 2-dimensional hydraulic model was developed to estimate the indicative 1% Annual Exceedance Probability (AEP) flood extents across the Study Area. The most significant flooding was found to be typically limited to along the mainstream alignments of Bennetts Creek, Traralgon Creek, Blind Joe Creek, Carr Creek, Flynn's Creek, Merriman Creek and Monkey Creek, with floodwater conveyed through the Study Area. The onshore Study Area is affected by small areas of Floodway Overlays associated with Lake Denison and Merrimans Creek.

Potential impacts may include removal of habitat, disturbance of water flows, groundworks causing sedimentation or reduced water quality due to turbidity or contaminated runoff or spills from the construction area.

These impacts can be mitigated or avoided through design development consideration of minimising waterway crossings and works adjacent to waterways in the riparian buffer zone, using boring techniques for waterway crossings where possible and adopting best practice erosion and sediment control and spill management. These will be developed through environmental management measures and detailed within a CEMP to manage and mitigate impacts from the Project.

At the cable landing points, trenchless techniques will also be considered to limit potential effects to the hydro-morphology and water quality from seabed and beach disturbance. The Project CEMP would require specific measures to control water quality impacts and these details would also be required for consent under the *Marine and Coastal Act 2018*.

Landscape and Visual

The offshore wind farm component of the Project will be located between 10 and 43 km from the Victorian coast and is likely to be visible from a number of public and private viewpoints along Ninety Mile Beach and other areas along the coastline, which are associated with a range of recreational activities and uses. The significance of the potential landscape and visual impacts will

be evaluated as part of a comprehensive seascape, landscape and visual assessment. A preliminary desktop assessment is included in **Attachment 4**.

There are potential cumulative landscape and visual impacts associated with the wind turbines and the transmission infrastructure alongside neighbouring projects. These will be assessed in a coordinated and integrated manner to the extent possible, having regard to information availability and timing.

12. Native vegetation, flora and fauna

Native vegetation

Is any native vegetation likely to be cleared or otherwise affected by the project?

NYD No Yes If yes, answer the following questions and attach details.

Native vegetation clearing is likely to be required to facilitate the construction of the onshore transmission infrastructure (subsea cable landing, substation, and overhead transmission line) in order to connect the offshore wind turbines into the existing electricity network. However, the preferred transmission route, substation location and subsea cable crossing is yet to be determined, with two onshore transmission routes and subsea cable crossings currently being investigated. The extent of native vegetation clearance required will be determined once a preferred alignment has been selected and the construction methodology has been determined.

The onshore Study Area allows for a five-kilometre buffer around the subsea cable landing options and a one-kilometre buffer around the overhead transmission route options and substation. The EVCs mapped within the Study Area are provided below but are not representative of the actual native vegetation present within the Study Area or the amount that would require removal. The actual amount of native vegetation likely to require clearing will be determined as the Project design is refined, applying the principles of avoiding and minimising vegetation loss where possible. Where practical, the overhead transmission line will use existing cleared easements and avoid high value conservation areas.

Clearing of native vegetation may result in vegetation fragmentation and associated edge effects, such as creating opportunities for the invasion of new pests and weeds, erosion and reducing core habitat for species. Avoiding and minimising native vegetation will be a key consideration in selection of the preferred transmission route.

Further information on potential impacts on native vegetation is provided in **Section 3.2 of Attachment 2**.

What investigation of native vegetation in the project area has been done? (briefly describe)

The Preliminary Desktop Biodiversity and Constraints Assessment was prepared by Biosis (2022) to identify potential ecological values and constraints, assess risks and potential impacts on ecological values, and identify possible mitigations. The desktop assessment broadly characterised the EVCs within the onshore Study Area. No field studies have been undertaken to date.

The Study Area is located within the Gippsland Lakes bioregion. Native vegetation within the bioregion has been significantly cleared, with very high clearing rates in the western parts near Melbourne. A total of 19 EVCs are modelled to occur within the Study Area (see **Figure 9 of Attachment 1**). These EVCs are outlined in **Table 5** and include forest, woodland, grassland, wetland, scrub, and saltmarsh communities.

Detailed native vegetation mapping and vegetation quality assessments will be undertaken once the preferred onshore transmission line infrastructure and associated construction footprint is determined.

What is the maximum area of native vegetation that may need to be cleared?

NYD Estimated area(hectares)

The maximum area of native vegetation that may be cleared has not yet been determined, as a preferred transmission route and construction footprint have not been finalised and field studies to confirm the presence and extent of native vegetation within the Project Area have not been conducted to date. Initial Project design indicates that the total length of the transmission routes are approximately 85 km (Option 1a and 1b) or 65 km (Option 2) and would likely have a construction corridor width of approximately 80 m to 100 m.

Detailed assessments of the Project will include field investigations and ground truthing to determine the maximum area of native vegetation that may need to be cleared. Avoidance and minimisation measures will be applied through the design and impact assessment evolution to mitigate impacts and retain native vegetation where possible, however, the Project will result in areas of removal.

The Referral under the EE Act for G-REZ by AusNet, which forms the transmission route option 1a for this Project, provides a conservative estimate of native vegetation removal. The estimate is based on DELWP EVC mapping, which will be ground-truthed through the proposed ecological survey program. The total amount of EVCs mapped within a 100 m corridor centred on G-REZ's proposed route and within the footprint of the proposed Giffard terminal station is approximately 20 ha of endangered EVCs and 60 ha of vulnerable EVCs. These areas are not reflective of the efforts that will be taken to avoid and minimise native vegetation clearance as the Project progresses, but provide an indication of the quantum of potentially present EVCs intersected by the Project at this stage.

How much of this clearing would be authorised under a Forest Management Plan or Fire Protection Plan?

N/A approx. percent (if applicable)

Which Ecological Vegetation Classes may be affected? (if not authorised as above)

NYD Preliminary/detailed assessment completed. If assessed, please list.

Based on the preliminary desktop assessment, there are 19 EVCs mapped within the onshore Study Area, as shown in Error! Reference source not found.. It is likely that some of these EVCs may be impacted due to vegetation clearing required to facilitate the construction of the onshore transmission infrastructure, however, the amount of potential vegetation loss is not yet known yet.

Table 5: Modelled EVCs within the Study Area

EVC	Bioregional Conservation Status	Modelled extent (ha)
EVC 01 – Coastal Dune Scrub / Coastal Dune Grassland Mosaic	Depleted	58.33
EVC 02 – Coast Banksia Woodland	Vulnerable	58.3
EVC 03 – Damp Sands Herb-rich Woodland	Vulnerable	321.37
EVC 09 – Coastal Saltmarsh	Least Concern	9.09
EVC 10 – Estuarine Wetland	Least Concern	519.08
EVC 16 – Lowland Forest	Vulnerable	2268.17
EVC 18 – Riparian Forest	Vulnerable	44.11
EVC 29 – Damp Forest	Endangered	3.70
EVC 48 – Heathy Woodland	Least Concern	866.36
EVC 53 – Swamp Scrub	Endangered	95.10
EVC 55 – Plains Grassy Woodland	Endangered	32.42
EVC 56 - Floodplain Riparian Woodland	Endangered	2.44
EVC 83 – Swampy Riparian Woodland	Endangered	95.10
EVC 132 - Plains Grassland	Endangered	71.40
EVC 136 – Sedge Wetland	Vulnerable	55.47
EVC 151 - Plains Grassy Forest	Vulnerable	10.19
EVC 191 – Riparian Scrub	Vulnerable	374.73
EVC 259 – Plains Grassy Woodland / Gilgai Wetland Mosaic	Endangered	10.55
EVC 698 – Lowland Forest / Heathy Woodland Mosaic	Vulnerable	397.34
Total		5,293.25

Further information on EVCs present within the Study Area is provided in **Section 4.2 of Attachment 2**.

Have potential vegetation offsets been identified as yet?

NYD Yes If yes, please briefly describe.

Offsets for the removal of native vegetation will likely be required. As the final transmission route and construction method is yet to be determined, the amount of vegetation clearing and offsets required cannot be determined at this stage.

Other information/comments? (eg. accuracy of information)

Refer to **Attachment 2** - Preliminary Desktop Biodiversity and Constraints Assessment (Biosis, 2022) for further information.

NYD = not yet determined

Flora and fauna**What investigations of flora and fauna in the project area have been done?**

(provide overview here and attach details of method and results of any surveys for the project & describe their accuracy)

A Preliminary Desktop Marine Environmental Assessment was undertaken by BMT (2022) (see **Attachment 5**) to provide an initial characterisation of the existing marine environment within the offshore Study Area and to identify potentially sensitive marine ecological values including flora and fauna species that have the potential to occur. The desktop assessment also provided an initial assessment of the potential impacts on marine environmental values as a result of the Project.

Publicly available information relating to the marine environmental features and values for the offshore Study Area was collated and reviewed. The primary data sources included:

- EPBC Act Protected Matters Search Tool, undertaken for the offshore Study Area
- Species sightings records and / or benthic habitat mapping:
 - Victorian Biodiversity Atlas
 - Atlas of Living Australia
- Marine Park, Ramsar Wetland and National Park listing criteria and / or Management Plans, which include descriptions of the values of these areas
- Species Profile and Threats Database (SPRAT) for mapping of the distribution and occurrence of species and / or their habitats, together with life-history information
- Species Recovery Plans for various threatened species prepared under the EPBC Act
- Previous environmental studies within or in proximity to the Study Area; in particular, EPBC Act referrals for the Star of the South Offshore Wind Farm and Seadragon Offshore Wind Farm have been utilised.

Following the desktop and database review, an assessment of the likelihood of listed species occurring in the offshore Study Area was undertaken. Where known, important life-history functions supported by the Study Area (i.e., breeding, foraging, nesting etc.) and other notable values were identified based on mapping of *Biologically Important Areas for regionally significant marine species* (BIAs) and Important Bird Areas (IBAs).

The Preliminary Desktop Biodiversity and Constraints Assessment prepared by Biosis (2022) (see **Attachment 2**) provides an initial characterisation of the existing terrestrial and aquatic ecological values, assess risks and potential impacts on ecological values and identifies potential mitigation measures within the Study Area.

A background review of databases and literature was undertaken to identify ecological values that may be present. This involved database searches using a 10 km buffer of the Study Area (referred to as the 'search area') of the following:

- DELWP's Victorian Biodiversity Atlas (VBA), including the 'VBA_FLORA25, FLORA100 & FLORA Restricted' and 'VBA_FAUNA25, FAUNA100 & FAUNA Restricted' datasets
- DCCEEW's Protected Matters Search Tool for matters protected by the EPBC Act

Other spatial datasets and sources of biodiversity information were reviewed including:

- DELWP's NatureKit mapping tool
- DELWP's Habitat Importance maps
- Ecological Vegetation Classes (EVC) (NV2005_EVCBCS) (DELWP, 2018)
- Flora and Fauna Guarantee Act Listed Communities (NV2005_FFG_COMM) (DELWP, 2018)
- Ecological Communities of National Environmental Significance Distributions (DAWE, 2020)
- Victorian Biodiversity Atlas (VBA) flora and fauna records
- Ramsar Wetlands of Australia (DoEE, 2018)
- Victorian Wetland Inventory (Current) (WETLAND_CURRENT) (DELWP, 2021)

Following the desktop and database review, an assessment of the likelihood of listed flora and fauna species occurring in the Study Area was undertaken, as well as an assessment of potential impacts from the Project on terrestrial ecological values.

Have any threatened or migratory species or listed communities been recorded from the local area?

NYD No Yes If yes, please:

- List species/communities recorded in recent surveys and/or past observations.
- Indicate which of these have been recorded from the project site or nearby.

Based on the **Attachments 2 and 5**, the following threatened species, migratory species, and ecological communities are likely to occur, or have potential to occur within the Study Area:

- 62 threatened flora species
- 123 threatened fauna species, including
 - 53 avifauna species (18 terrestrial birds and 35 shorebirds)
 - 20 terrestrial and aquatic fauna species
 - 16 seabird species
 - 34 marine fauna species
- 77 listed migratory species
- 7 threatened ecological communities

Threatened Flora

A search of the Protected Matters Search Tool (PMST) and Victorian biodiversity databases identified 62 threatened flora species that have a medium to high likelihood of occurring within the Study Area. Of these, 15 flora species are listed under the EPBC Act and 58 are listed under the FFG Act (these do not equal 62 as some species are listed under both Acts). Threatened flora records within 10 km of the Study Area are shown in **Figure 12** of **Attachment 1**.

Several of these listed species are terrestrial orchids including Leek-Orchids, Sun Orchids and a Greenhood Orchid, as listed in Error! Reference source not found.. Terrestrial orchids are cryptic species, emerging from the ground and flowering for only short periods of time each year. To identify the potential presence and extent of these species throughout the Study Area, targeted assessments will be necessary.

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

- Giffard (Rifle Range) Flora Reserve known to support populations and / or suitable habitat for several EPBC and FFG listed flora species such as Dwarf Kerrawang *Commersonia prostrata*
- Stradbroke Flora Reserve known to support populations and / or suitable habitat for several EPBC and FFG listed flora species such as Golden Grevillea *Grevillea chrysophaea*
- Wetlands, lakes, and waterways, particularly fresh-water creeks and their associated wetlands such as the Merriman Creek, Kangaroo Creek and Monkey Creek, are likely to

support suitable habitat for several EPBC and FFG listed flora species such as River Swamp Wallaby-grass *Amphibromus fluitans*, Yarra Gum *Eucalyptus yarraensis*, Swamp Everlasting *Xerochrysum palustre*.

Table 6: Threatened flora with a medium to high likelihood of occurring within the Study Area

Common name	Species name	Conservation status	
		EPBC	FFG
River Swamp Wallaby-grass	<i>Amphibromus fluitans</i>	VU	
Eastern Spider-orchid	<i>Caladenia orientalis</i>	EN	E
Thick-lip Spider-orchid	<i>Caladenia tessellata</i>	VU	
Dwarf Kerrawang	<i>Commersonia prostrata</i>	EN	E
Matted Flax-lily	<i>Dianella amoena</i>	EN	Cr
Trailing Hop-bush	<i>Dodonaea procumbens</i>	VU	
Strzelecki Gum	<i>Eucalyptus strzeleckii</i>	VU	Cr
Maroon Leek-orchid	<i>Prasophyllum frenchii</i>	EN	E
Dense Leek-orchid	<i>Prasophyllum spicatum</i>	VU	Cr
Wellington Mint-bush	<i>Prostanthera galbraithiae</i>	VU	E
Green-striped Greenhood	<i>Pterostylis chlorogramma</i>	VU	E
Swamp Fireweed	<i>Senecio psilocarpus</i>	VU	
Metallic Sun-orchid	<i>Thelymitra epipactoides</i>	EN	E
Spiral Sun-orchid	<i>Thelymitra matthewsii</i>	VU	E
Swamp Everlasting	<i>Xerochrysum palustre</i>	VU	Cr
Sticky Wattle	<i>Acacia howittii</i>		V
Stunted Sheoak	<i>Allocasuarina nana</i>		E
Sea Water-mat	<i>Althenia marina</i>		Cr
Wavy Swamp Wallaby-grass	<i>Amphibromus sinuatus</i>		E
Small-leaf Star-hair	<i>Astrotricha parvifolia</i> subsp. 1		Cr
Veined Spear-grass	<i>Austrostipa rudis</i> subsp. <i>australis</i>		E
Velvet Apple-berry	<i>Billardiera scandens</i> s.s.		E
Variable Bossiaea	<i>Bossiaea heterophylla</i>		E
Elegant Daisy	<i>Brachyscome salkiniae</i>		V
Orange-tip Finger-orchid	<i>Caladenia aurantiaca</i>		E
Slender pink-fingers	<i>Caladenia vulgaris</i>		V
Naked Beard-orchid	<i>Calochilus imberbis</i>		Cr
Mountain Bird-orchid	<i>Chiloglottis jeansii</i>		V
Pale Swamp Everlasting	<i>Coronidium gunnianum</i>		Cr
Spurred Helmet-orchid	<i>Corybas aconitiflorus</i>		E
Fringed Helmet-orchid	<i>Corybas fimbriatus</i>		E
Grey Billy-buttons	<i>Craspedia canens</i>		Cr
Eastern Water-ribbons	<i>Cycnogeton microtuberosum</i>		E
Bear's-ear	<i>Cymbonotus lawsonianus</i>		E
Purple Diuris	<i>Diuris punctata</i> var. <i>punctata</i>		E
Rough-grain Love-grass	<i>Eragrostis trachycarpa</i>		E
Gippsland Lakes Peppermint	<i>Eucalyptus arenicola</i>		E
Coast Grey-box	<i>Eucalyptus bosistoana</i>		E
Green Scentbark	<i>Eucalyptus fulgens</i>		E
Southern Blue-gum	<i>Eucalyptus globulus</i> subsp. <i>globulus</i>		E

Yarra Gum	<i>Eucalyptus yarraensis</i>		Cr
Veiled Fringe-sedge	<i>Fimbristylis velata</i>		E
Golden Grevillea	<i>Grevillea chrysophaea</i>		V
Salt Blown-grass	<i>Lachnagrostis robusta</i>		E
Rough Blown-grass	<i>Lachnagrostis rudis</i> subsp. <i>rudis</i>		E
Purple Blown-grass	<i>Lachnagrostis semibarbata</i> var. <i>filifolia</i>		E
Purple Blown-grass	<i>Lachnagrostis semibarbata</i> var. <i>semibarbata</i>		E
Dune Wood-sorrel	<i>Oxalis rubens</i>		E
Heath Platysace	<i>Platysace ericoides</i>		E
Coast Fescue	<i>Poa billardiarei</i>		E
Golden Pomaderris	<i>Pomaderris aurea</i>		E
Striped Pomaderris	<i>Pomaderris pilifera</i> subsp. <i>pilifera</i>		E
Fire-ball Weed	<i>Posidonia australis</i>		E
Fisch's Greenhood	<i>Pterostylis fischii</i>		E
Mentone Greenhood	<i>Pterostylis X toveyana</i>		E
Shingle Fireweed	<i>Senecio diaschides</i>		E
Annual Fireweed	<i>Senecio glomeratus</i> subsp. <i>longifructus</i>		V
Rush Lily	<i>Sowerbaea juncea</i>		V
Winter Sun-orchid	<i>Thelymitra hiemalis</i>		Cr
Dusky Violet	<i>Viola fuscoviolacea</i>		E
Parsley Xanthosia	<i>Xanthosia leiophylla</i>		E
Pink Zieria	<i>Zieria veronicea</i> subsp. <i>veronicea</i>		E

Threatened Fauna

A search of the PMST and Victorian biodiversity databases identified a total of 123 threatened fauna species considered to have a medium or higher likelihood of occurring within the Study Area. Of these, 57 are listed under the EPBC Act listed and 100 are listed under the FFG Act (these do not equal 123 as some species are listed under both Acts). Threatened fauna records within 10 km of the Study Area are shown in **Figure 13 of Attachment 1**.

Threatened fauna species have been categorised into the following:

- Avifauna (terrestrial birds and shorebirds)
- Terrestrial and aquatic fauna
- Seabirds
- Marine fauna.

Avifauna

Eighteen (18) listed terrestrial bird species have a medium or higher likelihood of occurring within the Study Area, as listed in **Table 7**. Of these, seven are listed under the EPBC Act, and 16 are listed under the FFG Act (these do not equal 18 as some species are listed under both Acts). Orange-bellied Parrot and Swift Parrot are known to traverse Bass Strait at certain times of the year when migrating from Tasmania to mainland Australia. White-throated Needletail is also migratory (a trans-equatorial migrant).

Thirty-five (35) listed shorebird species have a medium or higher likelihood of occurring within the Study Area, as listed in **Table 7**. Of these, 11 are listed under the EPBC Act and 33 are listed under the FFG Act (these do not equal 35 as some species are listed under both Acts). Particular shorebird hotspots within the Study Area and surrounds include the Gippsland Lakes Ramsar site and the Corner Inlet Ramsar site, which are internationally recognised as important habitat for resident and migratory shorebirds.

Table 7: Threatened terrestrial and shorebird species most likely to occur within the Study Area

Common Name	Species name	Conservation Status	
		EPBC	FFG
Terrestrial bird species			
Glossy Black-Cockatoo	<i>Calyptorhynchus lathami</i>	VU	Cr
Gang-gang Cockatoo	<i>Callocephalon fimbriatum</i>	EN	
Orange-bellied Parrot	<i>Neophema chrysogaster</i>	CR	Cr
Swift Parrot	<i>Lathamus discolor</i>	CR	Cr
White-throated Needle-tail	<i>Hirundapus caudacutus</i>	VU, Migratory	V
Pilotbird	<i>Pycnoptilus floccosus</i>	VU	
Painted Honeyeater	<i>Grantiella picta</i>	VU	V
Grey Goshawk	<i>Accipiter novaehollandiae</i>		E
Little Eagle	<i>Hieraaetus morphnoides</i>		V
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>		E
Square-tailed Kite	<i>Lophoictinia isura</i>		V
Barking Owl	<i>Ninox connivens</i>		Cr
Powerful Owl	<i>Ninox strenua</i>		V
Masked Owl	<i>Tyto novaehollandiae</i>		Cr
Hooded Robin	<i>Melanodryas cucullate</i>		V
Chestnut-rumped Heathwren	<i>Calamanthus pyrrhopygius</i>		V
White-browed Treecreeper	<i>Climacteris affinis</i>		E
Diamond Firetail	<i>Stagonopleura guttata</i>		V
Shorebird, wetland, and tern species			
Australian Painted-snipe	<i>Rostratula australis</i>	EN	Cr
Australasian Bittern	<i>Botaurus poiciloptilus</i>	EN	Cr
Australian Fairy Tern	<i>Sternula nereis nereis</i>	VU	
Bar-tailed Godwit (baueri)	<i>Limosa lapponica baueri</i>	VU, Migratory	
Hooded Plover	<i>Thinornis cucullatus</i>	VU	V
Lesser Sand Plover	<i>Charadrius mongolus</i>	EN, Migratory	E
Greater Sand Plover	<i>Charadrius leschenaultii</i>	VU, Migratory	V
Eastern Curlew	<i>Numenius madagascariensis</i>	CR, Migratory	Cr
Curlew Sandpiper	<i>Calidris ferruginea</i>	CR, Migratory	Cr
Red Knot	<i>Calidris canutus</i>	EN, Migratory	E
Great Knot	<i>Calidris tenuirostris</i>	CR, Migratory	Cr
Lewin's Rail	<i>Lewinia pectoralis</i>		V
Little Egret	<i>Egretta garzetta</i>		C
Plumed Egret	<i>Ardea intermedia plumifera</i>		Cr
Eastern Great Egret	<i>Ardea alba modesta</i>		V
Australian Little Bittern	<i>Ixobrychus dubius</i>		E
Magpie Goose	<i>Anseranas semipalmata</i>		V
Australasian Shoveler	<i>Spatula rhynchotis</i>		V
Freckled Duck	<i>Stictonetta naevosa</i>		E
Hardhead	<i>Aythya australis</i>		V
Blue-billed Duck	<i>Oxyura australis</i>		V
Musk Duck	<i>Biziura lobata</i>		V
Caspian Tern	<i>Hydroprogne caspia</i>	Migratory	V
Little Tern	<i>Sternula albifrons</i>	Migratory	Cr
Ruddy Turnstone	<i>Arenaria interpres</i>	Migratory	E

Grey Plover	<i>Pluvialis squatarola</i>	Migratory	V
Pacific Golden Plover	<i>Pluvialis fulva</i>	Migratory	V
Whimbrel	<i>Numenius phaeopus</i>	Migratory	E
Wood Sandpiper	<i>Tringa glareola</i>	Migratory	E
Grey-tailed Tattler	<i>Tringa brevipes</i>	Migratory	Cr
Common Sandpiper	<i>Actitis hypoleucos</i>	Migratory	V
Common Greenshank	<i>Tringa nebularia</i>	Migratory	E
Marsh Sandpiper	<i>Tringa stagnatilis</i>	Migratory	E
Terek Sandpiper	<i>Xenus cinereus</i>	Migratory	E
Black-tailed Godwit	<i>Limosa limosa</i>	Migratory	Cr

Terrestrial and aquatic fauna

Twenty (20) listed terrestrial and aquatic fauna have a medium to high likelihood of occurring within the Study Area, as listed in **Table 8** Error! Reference source not found.. Of these, nine are listed under the EPBC Act, and 19 are listed under the FFG Act (these do not equal 20 as some species are listed under both Acts). Threatened arboreal species such as Southern Greater Glider and Grey-headed Flying Fox may use large trees and native vegetation within the onshore Study Area. Wetlands and waterways within the Study Areas and surrounds are likely to provide important habitat for nationally listed amphibian and ichthyofauna populations.

Table 8: Threatened non-avian terrestrial and freshwater fauna most likely to occur within the Study Area

Common Name	Species Name	Conservation Status	
		EPBC	FFG
Southern Greater Glider	<i>Petauroides volans</i>	VU	V
New Holland Mouse	<i>Pseudomys novaehollandiae</i>	VU	E
Southern Brown Bandicoot	<i>Isodon obesulus obesulus</i>	EN	E
Grey-headed Flying Fox	<i>Pteropus poliocephalus</i>	VU	V
Green and Golden Bell Frog	<i>Litoria aurea</i>	VU	
Growling Grass Frog	<i>Litoria raniformis</i>	VU	V
Australian Grayling	<i>Prototroctes maraena</i>	VU	E
Dwarf Galaxias	<i>Galaxiella pusilla</i>	VU	E
Macquarie Perch	<i>Macquaria australasica</i>	EN	E
White-footed Dunnart	<i>Sminthopsis leucopus</i>		V
Platypus	<i>Ornithorhynchus anatinus</i>		V
Yellow-bellied Sheath-tail Bat	<i>Saccolaimus flaviventris</i>		V
Lace Monitor	<i>Varanus varius</i>		E
Swamp Skink	<i>Lissolepis coventryi</i>		E
Glossy Grass Skink	<i>Pseudemoia rawlinsoni</i>		E
Southern Toadlet	<i>Pseudophryne semimarmorata</i>		E
Martin's Toadlet	<i>Uperoleia martini</i>		Cr
Flinders Pygmy Perch	<i>Nannoperca sp. 1</i>		V
Alpine Darner Dragonfly	<i>Austroaeschna (Austroaeschna) flavomaculata</i>		V
South Gippsland Spiny Crayfish	<i>Euastacus neodiversus</i>		E

Seabirds

Sixteen (16) listed seabird species have a medium to high likelihood of occurring within the Study Area, as listed in **Table 9**. Of these, 15 are listed under the EPBC Act and 10 are listed under the FFG Act (these do not equal 16 as some species are listed under both Acts).

The Bass Strait Islands, particularly those west and east of Wilsons Promontory, provide nesting habitat for several other important seabird species. While there are no known seabird breeding colonies within the Study Area, several breeding species are known to breed within 50 km of the Study Area, including:

- Little Penguin *Eudyptula minor*
- Short-tailed Shearwater *Ardenna tenuirostris*
- Black-faced Cormorant *Phalacrocorax fuscescens*
- Common Diving-Petrel *Pelecanoides urinatrix*
- Fairy Prion *Pachyptila turtar*
- Pacific Gull *Larus pacificus*.

Given the high mobility and dispersal capabilities of seabirds, particularly outside of the breeding period, it is highly likely that these species' ranges overlap with the Study Area.

Table 9: Threatened Seabird species most likely to occur within the Study Area

Common Name	Species Name	Conservation Status	
		EPBC	FFG
Fairy Prion (southern)	<i>Pachyptila turtur subantarctica</i>	VU	
Gould's Petrel	<i>Pterodroma leucoptera leucoptera</i>	EN	
Blue Petrel	<i>Halobaena caerulea</i>	VU	
Wandering Albatross	<i>Diomedea exulans</i>	VU, Migratory	Cr
Black-browed Albatross	<i>Thalassarche melanophris</i>	VU, Migratory	
Indian Yellow-nosed Albatross	<i>Thalassarche carteri</i>	VU, Migratory	E
Grey-headed Albatross	<i>Thalassarche chrysostoma</i>	EN, Migratory	E
Shy Albatross	<i>Thalassarche cauta</i>	EN, Migratory	E
Sooty Albatross	<i>Phoebetria fusca</i>	VU, Migratory	Cr
Southern Giant-Petrel	<i>Macronectes giganteus</i>	EN, Migratory	E
Buller's Albatross	<i>Thalassarche bulleri</i>	VU, Migratory	E
Northern Giant-Petrel	<i>Macronectes halli</i>	VU, Migratory	E
Southern Royal Albatross	<i>Diomedea epomophora</i>	VU, Migratory	Cr
White-capped Albatross	<i>Thalassarche steadi</i>	VU, Migratory	
Campbell Albatross	<i>Thalassarche impavida</i>	VU, Migratory	
Light-mantled Sooty Albatross	<i>Phoebetria palpebrata</i>	Migratory	Cr

Marine fauna

As listed in **Table 10**, a total of 34 listed marine fauna species are likely to occur within the offshore Study Area based on a search of the EPBC PMST. Of these, 15 are listed under the EPBC Act and 22 are listed under the FFG Act. These include:

- 9 whale, dolphin, and seal species
- 3 turtle species
- 9 shark and fish species
- 13 marine benthic species

The offshore Study Area supports potential foraging habitat for a range of threatened / migratory marine species, including cetaceans (whales / dolphin species), pinnipeds, sharks, and marine turtles. In particular, the site is a BIA for the Pygmy Blue Whale, Southern Right Whale, and White Shark. It is likely the lack of habitat values for these species within the offshore Study Area (i.e.

rock outcrops, reefs, kelp forests, seagrass beds or other high productivity features), makes it less likely the Study Area provides critical habitat for these species.

Table 10: Marine fauna with potential to occur within the Study Area

Common Name	Scientific Name	Conservation Status	
		EPBC	FFG
Whale, Dolphin, and Seal Species			
Long-nosed fur-seal	<i>Arctocephalus forsteri</i>	Marine	V
Sei Whale	<i>Balaenoptera borealis</i>	VU, Migratory	
Blue Whale	<i>Balaenoptera musculus</i>	EN, Migratory	Cr
Fin Whale	<i>Balaenoptera physalus</i>	VU, Migratory	
Pygmy right whale	<i>Caperea marginate</i>	Migratory	
Southern Right Whale	<i>Eubalaena australis</i>	EN, Migratory	Cr
Humpback Whale	<i>Megaptera novaeangliae</i>	Migratory	V
Killer Whale	<i>Orcinus orca</i>	Migratory	
Dusky Dolphin	<i>Lagenorhynchus obscurus</i>	Migratory	
Turtles			
Loggerhead Turtle	<i>Caretta caretta</i>	EN, Migratory	
Green Turtle	<i>Chelonia mydas</i>	VU, Migratory	
Leatherback Turtle	<i>Dermochelys coriacea</i>	EN, Migratory	Cr
Sharks and Fish			
Shortfin mako	<i>Isurus oxyrinchus</i>	Migratory	
Australian grayling	<i>Prototroctes maraena</i>	VU	E
White shark	<i>Carcharodon carcharias</i>	VU, Migratory	E
Porbeagle	<i>Lamna nasus</i>	Migratory	
Eastern dwarf galaxias	<i>Galaxiella pusilla</i>	VU	
School shark	<i>Galeorhinus galeus</i>	CD	
Whale shark	<i>Rhincodon typus</i>	VU	
Blue warehou	<i>Seriolella brama</i>	CD	Cd
Southern bluefin tuna	<i>Thunnus maccoyii</i>	CD	Cd
Marine Benthic Species			
Ghost shrimp species	<i>Eucalliax tooradin</i>		E
Ghost shrimp species	<i>Michelea microphylla</i>		V
Brittle star species	<i>Amphiura trisacantha</i>		Cr
Sea-cucumber species	<i>Apsolidium densum</i>		E
Sea-cucumber species	<i>Apsolidium handrecki</i>		E
Brittle star species	<i>Ophiocomina australis</i>		Cr
Sea-cucumber species	<i>Pentocnus bursatus</i>		Cr
Sea-cucumber species	<i>Thyone nigra</i>		E
Sea-cucumber species	<i>Trochodota shepherdii</i>		Cr
Stalked hydroid species	<i>Ralpharia coccinea</i>		Cr
Chiton species	<i>Bassethullia glypta</i>		Cr
Marine opisthobranch species	<i>Platydorid galbana</i>		E
Marine opisthobranch species	<i>Rhodope rousei</i>		Cr

Migratory Species

As listed in **Table 11**, a search of the Study Area with a 10 km buffer of the PMST and Victorian databases identified a further 30 EPBC Act listed migratory bird species that are predicted to occur within the search area (that are not listed as threatened under the EPBC or FFG Act). Species that are listed as migratory and threatened under the EPBC and / or FFG Act are listed in Table 6Error! Reference source not found.**Table 7, Table 8, Table 9 and Table 10.**

Table 11: Listed migratory species under the EPBC Act that are predicted to occur within the search area

Common Name	Species Name
Pin-tailed Snipe	<i>Gallinago stenura</i>
Swinhoe's Snipe	<i>Gallinago megala</i>
Latham's Snipe	<i>Gallinago hardwickii</i>
Glossy Ibis	<i>Plegadis falcinellus</i>
Eastern Osprey	<i>Pandion cristatus</i>
Fork-tailed Swift	<i>Apus pacificus</i>
Osprey	<i>Pandion haliaetus</i>
Sooty Shearwater	<i>Ardenna grisea</i>
Short-tailed Shearwater	<i>Ardenna tenuirostris</i>
Flesh-footed Shearwater	<i>Ardenna carneipes</i>
Common Tern	<i>Sterna hirundo</i>
Northern Royal Albatross	<i>Diomedea antipodensis</i>
New Zealand Wandering Albatross	<i>Diomedea antipodensis</i>
Salvin's Albatross	<i>Thalassarche salvini</i>
White-capped Albatross	<i>Thalassarche steadi</i>
Campbell Albatross	<i>Thalassarche impavida</i>
Ruff (Reeve)	<i>Philomachus pugnax</i>
White-winged Black Tern	<i>Chlidonias leucopterus</i>
Crested Tern	<i>Thalasseus bergii</i>
Double-banded Plover	<i>Charadrius bicinctus</i>
Oriental Plover	<i>Charadrius veredus</i>
Little Curlew	<i>Numenius minutus</i>
Red-necked Stint	<i>Calidris ruficollis</i>
Sharptailed Sandpiper	<i>Calidris acuminata</i>
Sanderling	<i>Calidris alba</i>
Pectoral Sandpiper	<i>Calidris melanotos</i>
Yellow Wagtail	<i>Motacilla flava</i>
Rufous Faintail	<i>Rhipidura rufifrons</i>
Satin Flycatcher	<i>Myiagra cyanoleuca</i>
Black-faced Monarch	<i>Monarcha melanopsis</i>

Threatened Ecological Communities

As listed in **Table 12**Error! Reference source not found., seven TECs listed under the FFG Act are likely to occur in the Study Area.

Table 12: TECs likely to occur within the Study Area

Community Name	Conservation Status (FFG Act)	Modelled extent within the Study Area
Coastal Moonah (<i>Melaleuca lanceolata</i> subsp. <i>lanceolata</i>) Woodland Community	Threatened	This TEC is modelled to occur along almost the entire length of the coastline within the Study Area.

Central Gippsland Plains Grassland Community	Threatened	These TECs are all modelled in small patches at the western end of the transmission route. Many of the listed TECs remain as small, disjunct patches of vegetation running alongside roadsides and between plantations. Roadside remnant vegetation can be highly diverse and plays an important role in providing biodiversity and habitat in otherwise agricultural landscapes.
Cool Temperate Rainforest Community	Threatened	
Forest Red Gum Grassy Woodland Community	Threatened	
Herb-rich Plains Grassy Wetland (West Gippsland) Community	Threatened	
Plains Grassland (South Gippsland) Community	Threatened	
Sedge Rich <i>Eucalyptus camphora</i> Swamp Community	Threatened	

If known, what threatening processes affecting these species or communities may be exacerbated by the project? (eg. loss or fragmentation of habitats) Please describe briefly.

The following threatening processes identified under the FFG Act, have potential to be exacerbated by construction and operation of the Project:

Onshore

Alteration to the flow of rivers and streams

The onshore Study Area intersects with several watercourses. While a preferred transmission route has not been selected, it is likely that a number of waterways would be crossed by the Project. However, waterways are likely to be avoided with appropriate placement of transmission line infrastructure. Potential impacts could include removal of habitat, sedimentation, reduced water quality and disturbance of water flows. Any effects on waterway flows and water quality would be expected to be temporary during construction and of short duration.

Degradation of native riparian vegetation along Victorian rivers and streams

There is potential for native riparian vegetation along Victorian rivers and streams that are intersected by the transmission route to be impacted during construction. The siting of the transmission line would avoid native riparian vegetation where possible, and mitigation would be implemented to avoid and minimise the potential for impacts on ecological values along riparian corridors.

Habitat fragmentation as a threatening process for fauna in Victoria

As it is likely that the removal of native vegetation would be required for construction of the onshore transmission infrastructure, there is potential for works to result in habitat fragmentation for threatened fauna species relying on vegetation within the onshore Study Area. This can impact the ability of species to forage and breed depending on the location and severity of the fragmentation. Where practical the overhead transmission line will use existing cleared easements and avoid or minimise vegetation loss where possible.

Increase in sediment input into Victorian rivers and streams due to human activities

Design and mitigation would aim to avoid and minimise potential impacts on Victorian rivers and streams – this includes use of trenchless construction methods under important ecological values along riparian corridors, and ensuring sediment loaded runoff does not reach nearby waterways. Best-practice construction methods would be adopted for the Project and implemented in accordance with the Construction Environmental Management Plan (CEMP). The CEMP would identify key waterways where runoff and sedimentation may result in down-stream impacts to significant waterways and aquatic fauna.

Input of petroleum and related products into Victorian marine and estuarine environments / Input of toxic substances into Victorian rivers and streams

Construction of the onshore transmission infrastructure has the potential to result in fuel or chemical spills, which could end up in nearby waterways, waterbodies and coastal areas leading to contamination of marine and estuarine environments. Appropriate methods for storing and managing chemicals and fuels during construction will be detailed in the Project's CEMP.

Invasion of native vegetation by 'environmental weeds'

The Project has the potential to introduce 'environmental weeds' during construction. This includes introducing exotic weeds to areas of high-quality vegetation where weeds are not a dominant component of the community, as well as facilitating the invasion of native environmental weeds by removing structural components of the vegetation community that allow for native weeds to become prolific.

Loss of hollow-bearing trees from Victorian native forests

Coarse woody debris and hollow-bearing trees may be present within the onshore Study Area. The onshore transmission infrastructure would aim to avoid any high value conservation or forest areas that are present within the onshore Study Area. Where identified, hollow-bearing trees would be avoided as a priority during the design and development process.

Wetland loss and degradation as a result of change in water regime, dredging, draining, filling and grazing

Potential impacts to waterbodies and wetlands will be identified and addressed during further assessments to be undertaken for the Project. No dredging or draining of wetlands is to be undertaken as part of Project works, however, any potential for impacts associated with wetland loss and degradation will be identified and avoided and / or minimised where possible.

The spread of *Phytophthora cinnamomi* from infected sites into parks and reserves, including roadsides, under the control of a state or local government authority

Field assessments are yet to be undertaken for the Project, however, there is potential for *Phytophthora cinnamomic* (cinnamon fungus) to be present within the onshore Study Area. Cinnamon fungus was observed during preliminary assessments undertaken for the nearby Star of the South Offshore Wind Farm, within Merriman Creek Flora Reserve and Mullungdung State Forest (AECOM, 2020). As both Merriman Creek Flora Reserve and Mullungdung State Forest intersect with the onshore Study Area, there is potential for cinnamon fungus to present and for it to spread to other parks and reserves during vegetation clearance and construction activities. Best practice techniques for reducing the introduction and spread of cinnamon fungus during construction would be identified in the CEMP. Material and fill for the Project would be sourced from a reputable clean-waste company to reduce the instance of cinnamon fungus-infected gravel and material being introduced to sites.

Offshore

Habitat fragmentation as a threatening process for flora and fauna in Victoria

Habitat fragmentation is considered low risk for marine flora and fauna due to the connectivity of adjacent parts of the coast and the ability of migrating fauna to find alternative routes if disturbed. The relatively small areas of disturbance in the offshore Study Area associated with the Project are unlikely to affect the ecological connection between marine habitats along the Gippsland coast. Therefore, offshore marine fauna species are not likely to be impacted by habitat fragmentation.

Input of petroleum and related products into Victorian marine and estuarine environments

There is potential for spills to occur during construction and operation associated with vessel collisions, grounding, or refuelling incidents. While such an event can occur, they are highly unlikely. Depending on location, nature, and scale of the spill, this could impact on protected marine parks and reserves, Ramsar wetlands and threatened species. With the implementation of the appropriate legislative and standard control measures, it is unlikely a substantial spill would occur.

The discharge of human-generated marine debris into Victorian marine waters or estuarine waters

Human-generated debris has potential to enter Victorian marine waters during construction and operation of the Project. Floating non-degradable debris (e.g., plastics) are often mistaken by turtles for prey species and ingested, or accidentally ingested by other marine species. No planned discharge of human-generated debris will occur, and the Project will develop practices to prevent dropped objects, develop waste and equipment storage and handling procedures and procedures to recover dropped objects or wastes wherever practicable.

The introduction of exotic organisms into Victorian marine waters

There is potential for pest species to be introduced to Victorian marine waters through biofouling of a vessel hull, or the release of pests into the marine environment via ballast waters. Turbines may also provide a surface for fouling pest species. The risk of introduction or spread of these is expected to be minimal, assuming the implementation of industry standard mitigation measures (use of local vessels where practicable, ballast water management, hull inspections, adherence to legislative requirements for biofouling).

The following potential indirect impacts of the Project on Commonwealth waters have also been identified in association with the Project works and components within Victorian waters (see **Attachment 5** for more information):

- Generation of underwater noise during construction and operations
- Introduction of pest species through vessel movements, construction etc.
- Deterioration in water quality as a result of spills or generation of turbid plumes during construction or operations
- Vessel strike to marine fauna from vessels moving to and from Commonwealth waters
- Light pollution (Maybe on the edge of the area, but should be unlikely)

Are any threatened or migratory species, other species of conservation significance or listed communities potentially affected by the project?

NYD No Yes If yes, please:

- List these species/communities:
- Indicate which species or communities could be subject to a major or extensive impact (including the loss of a genetically important population of a species listed or nominated for listing) Comment on likelihood of effects and associated uncertainties, if practicable.

As identified above, the Preliminary Desktop Biodiversity and Constraints Assessment (Biosis, 2022) (**Attachment 2**) and the Preliminary Desktop Marine Environmental Assessment (BMT, 2022) (**Attachment 5**) identified the following EPBC Act and FFG Act listed threatened species, migratory species, and ecological communities as likely to occur, or have potential to occur within the Study Area:

- 62 threatened flora species
- 123 threatened fauna species, including
 - 53 avifauna species (18 terrestrial birds and 35 shorebirds)
 - 20 terrestrial and aquatic fauna species
 - 16 seabird species
 - 34 marine fauna species
- 77 listed migratory species
- 7 threatened ecological communities

Field assessments have not yet been undertaken to confirm the presence or occurrence of these species, however, both construction and operation of the Project have potential to impact on these threatened species, migratory species and ecological communities should they be present. Further detail on the assessment of potential impacts is provided in **Attachment 2** and **Attachment 5**, with a summary of the key potential impacts provide below.

Threatened flora species

There is potential for threatened flora species listed under both the FFG Act and EPBC Act to be subject to direct removal and indirect habitat loss during construction of the onshore transmission infrastructure. Threatened flora are at a heightened risk of impact during construction works due to their sedentary nature. Field assessments have not yet been undertaken to determine if and what threatened flora species are present, and to what extent any species would be impacted.

The 58 FFG Act listed flora species identified in the desktop assessment (as having a medium to high likelihood to occur), occur in a range of habitats throughout the onshore Study Area. There

are a number of range restricted flora species such as the Gippsland Lakes Peppermint *Eucalyptus arenicola* (Endangered under the FFG Act). The onshore Study Area is also likely to contain disjunct populations of several threatened flora species such as Rush Lily *Sowerbaea juncea* (Vulnerable under the FFG Act) and Dusky Violet *Viola fuscoviolacea* (Endangered under the FFG Act). Due to the number of FFG Act listed flora species and the breadth of habitats that these species occupy, it is likely that several of these species will need to be considered further. This will require detailed flora assessments to determine the extent of each species throughout the Study Area.

The Project would seek to avoid areas of greatest value for threatened flora species within the Study Area that are known to support and / or have suitable habitat for FFG Act listed flora species, including Giffard (Rifle Range) Flora Reserve, Stradbroke Flora Reserve and various wetlands, lakes, and waterways.

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.

Appendix 1 of Attachment 2 provides a complete list of threatened flora species and their potential to occur within the onshore Study Area.

Threatened avifauna, seabird, and migratory 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. 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.

Wind farms have the potential to be a threat to avifauna given the risk of collisions with turbines. The positioning of wind turbines offshore 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 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 discolor* and Whitethroated Needletail *Hirundapus caudacutus*. These species and other non-listed species are collectively termed Bass Strait migrants. 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. As such, it is not possible to discount the effects of an offshore wind project on these species, and further consideration is warranted.

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 the Study Area include Gippsland Lakes Ramsar site and Corner Inlet Ramsar site, which are both internationally recognised as an important habitat for resident and migratory shorebirds.

Migratory shorebirds may also be impacted during operation of the Project. In addition to providing important foraging habitat for over 30,000 shorebirds each year, Corner Inlet Ramsar site is also an important gathering site for trans-equatorial migratory shorebirds which gather in large numbers prior to departing on their northward migration. Migratory shorebirds may be at risk of collisions 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, given their mobility and the relatively poor understanding of migration routes and flight heights, potential impacts on migratory shorebirds require further consideration during the detailed design and assessment stage of the Project.

Seabirds are of particular concern with regard to collision risk with wind turbines. Of the 16 seabird species that have potential to occur within the Study Area, 13 are also listed as migratory. The Bass Strait Islands, particularly those to west and east of Wilsons Promontory, provide nesting habitat for a number of other important seabird species. While there are no known seabird breeding colonies within the Study Area, several breeding species are known to breed within 50

kilometres of the Study Area, including Little Penguin, Short-tailed Shearwater, Black-faced Cormorant, Common Diving-Petrel, Fairy Prion and Pacific Gull. Given the high mobility and dispersal capabilities of seabirds, particularly outside of the breeding period, it is highly likely that these species' ranges overlap with the Study Area.

Threatened terrestrial and aquatic fauna species

Ground dwelling and arboreal species, as well as species that inhabit freshwater streams and waterbodies within the onshore Study Area have potential to be impacted by the Project, primarily during construction. The key potential impact on threatened terrestrial and aquatic fauna species that may occur is associated with disturbance of, or the removal of, suitable habitat. Hollow-dependent fauna, sedentary fauna, or fauna with relatively defined ecological niches and / or small home ranges are considered most likely to be impacted during construction of the Project due to their ecology and habitat requirements.

Removal and impact to large trees and native vegetation may impact threatened arboreal species such as Southern Greater Glider *Petauroides volans* and Grey-headed Flying-fox *Pteropus poliocephalus*. Under boring or trenching activities associated with cable routing may impact the habitat of ground-dwelling fauna such as New Holland Mouse *Pseudomys novaehollandiae* and Southern Brown Bandicoot *Isodon obesulus obesulus* potentially through habitat removal or fragmentation.

Wetlands and waterways within the Study Area and surrounds are likely to provide important habitat for threatened amphibian and ichthyofauna populations, such as Growling Grass Frog, Australian Grayling, and Dwarf Galaxias. Any impacts to aquatic habitats associated with the works during the construction (e.g. runoff, altering of the natural course of waterways, etc.) would be avoided and / or minimised through the implementation of industry standard mitigation measures within a CEMP.

Appendix 2 of Attachment 2 provides a complete list of threatened fauna species and their potential to occur within the onshore Study Area.

Threatened and migratory marine fauna

Construction of the offshore components of the Project have potential to impact on benthic habitats and the threatened marine benthic species they support. Activities that may directly impact benthic habitat disturbance are piling (for foundation installation this will depend on the final foundation concept chosen), installation of the foundations and scour protection, installation of the inter-turbine array cables and laying of the main subsea transmission cable. Although the exact disturbance footprint within the offshore Study Area is not yet known, it is likely that any areas of sensitive habitat can be avoided. It is unlikely that habitat loss will physically fragment habitats to the extent that major flow-on impacts to benthic communities and the threatened species they support will occur. Benthic habitat mapping will be undertaken to determine the presence or absence of threatened marine benthic species and their associated habitats, and the potential for impacts.

Pile driving may be required (depending on the final foundation concept chosen). This generates pulses of noise and vibration that have the potential to impact marine fauna including threatened and listed migratory species (whales / dolphins, pinnipeds, turtles, sharks), and species of high fisheries significance (finfish, rock lobster etc.). Noise impacts can be permanent (death/injury), long-term (e.g. permanent hearing loss) or short-term (behavioural, including avoidance), depending on exposure and sensitivity of species. The degree of noise exposure depends on the nature of works and local environmental conditions. Mitigation measures to reduce potential pile driving impacts on threatened / migratory marine fauna include seasonal construction windows (dependent on species) and safety zones / lookouts. It is expected that marine fauna would return to the area following installation and it is not expected that impacts would affect species population in the long-term.

Vessel movements pose a risk of fauna strike, especially for large, slow-moving fauna near the surface such as whales. It is likely that a number of whale species utilise the offshore Study Area for either foraging or migration activity, although further studies will be required to confirm this. Whales are vulnerable due to their slow swimming speed and lack of awareness of the threats posed by vessels (DoEE 2017). Pinnipeds and dolphins are also at risk of collision with high-speed vessels. Further details will be required to determine vessel traffic intensities but would likely be higher during the construction and decommissioning stages than operation.

Noise and vibration levels generated by turbines during operation would be lower than pile driving and unlikely to cause acute impacts (injury / mortality) to marine fauna. The noise and vibration generated by turbines is persistent (but dependent on wind speeds) which may result in changes to the behaviour of fauna. This may result in avoidance or attraction responses, increases in intensity of vocal communication, and masking of noises used by fauna. The degree of impact is dependent on cumulative noise and vibration levels generated by the wind turbine layout, background noise levels, and the sensitivity of fauna. Further work will be required to characterise background noise levels and the anticipated Project generated noise, and to identify the potential for impacts on marine fauna.

Potential impacts on threatened marine fauna are further discussed in **Attachment 2**.

Threatened ecological communities

Seven TECs listed under the FFG Act are modelled to occur within the onshore Study Area. Potential impacts on TECs are primarily associated with direct removal and indirect habitat loss during construction of the onshore transmission infrastructure. Field assessments have not yet been undertaken to determine if, and to what extent, any of these TECs are present and if they would be impacted. The onshore transmission infrastructure would be designed and sited to avoid direct impacts on TECs as far as practicable.

Is mitigation of potential effects on indigenous flora and fauna proposed?

NYD No Yes If yes, please briefly describe.

The following preliminary mitigation measures have been developed to avoid and minimise potential impacts on terrestrial flora and fauna species:

- Avoiding / minimising unnecessary duplication of infrastructure e.g. utilise existing easements to connect to existing transmission network, co-locate Project components with other infrastructure.
- Aligning the impact footprint through existing cleared land, including agricultural land and plantations.
- Strategic use of horizontal directional drilling / 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.
- 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.
- Development of a project specific Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan (OEMP).
- 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.

The following preliminary mitigation measures have been developed to avoid and minimise potential impacts on marine fauna:

- Undertake habitat mapping and avoid locating Project infrastructure within areas on sensitive benthic habitats
- Implement soft start procedures
- Utilise seasonal construction windows (this would vary dependent on species)
- Use safety zones / lookout
- Use go-slow procedures for vessels
- Use trained spotters for marine fauna for high-risk activities
- Undertake hull inspections of vessels used for construction and operation

- Source local vessels where practicable
- Implement standard ballast water management procedures
- Adhere to industry standard chemical storage, handling, and maintenance procedures
- Bury the subsea cabling at a sufficient depth (e.g. 1 - 1.5 m)
- Minimise lighting where possible
- Avoid lighting the water surface
- Adhere to relevant water quality guidelines
- Compliance with maritime legislation for discharges to the marine environment
- Adhere to legislative requirements for biofouling
- Use vessel exclusion zones around operations
- Develop a spill response plan
- 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, particularly in regard to mitigating the collision risk of bird species with turbines. This will involve exploring the latest industry guidance and findings from other offshore wind projects.

Mitigation measures will be further defined during detailed design and further environmental assessments, including any findings from further biodiversity and marine field surveys. Detailed and impact-specific mitigation measures will be developed to protect FFG Act listed threatened species and ecological communities. A Project CEMP will be developed to inform approvals and the *Offshore Electricity Infrastructure Act 2021* licensing.

Other information/comments? (eg. accuracy of information)

The information presented in this section is based on desktop assessment only – Refer to **Attachment 2**.

Field surveys will be undertaken to verify the species present and a detailed assessment of potential Project impacts will be undertaken following confirmation of the Project design.

13. Water environments

<p>Will the project require significant volumes of fresh water (eg. > 1 GL/yr)? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, indicate approximate volume and likely source.</p> <p>The Project is not anticipated to require significant volumes of fresh water, with the main use of fresh water to be during construction primarily for trench construction, dust suppression, and concrete production. Water requirements during operation are expected to be substantially less than one gigalitre per year (< 1GL/yr).</p>
<p>Will the project discharge waste water or runoff to water environments? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, specify types of discharges and which environments.</p> <p>There is the potential for small volumes of water to be discharged to receiving water environments during construction. This would primarily be run-off from work sites and access track surfaces during rainfall events. Appropriate sediment and erosion control measures would be developed within the CEMP in accordance with best practice to avoid sedimentation of waterways. Protocols regarding spill response and use of spill kits on site would also be included in the CEMP.</p> <p>There is a negligible risk of wastewater runoff due to the relatively low volumes of wastewater that would be generated during construction and with the implementation of industry standard mitigation measures typical for Projects of this scale and complexity. Wastewater generated during construction would be stored and then transported for disposal offsite using licensed suppliers.</p> <p>Any planned discharges from vessels into the marine environment would occur in compliance with relevant legislation.</p>
<p>Are any waterways, wetlands, estuaries or marine environments likely to be affected? <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, specify which water environments, answer the following questions and attach any relevant details.</p> <p>Onshore</p> <p>DELWP’s Victorian Wetland Inventory dataset identifies over 300 wetlands within the Study Area. One of these wetlands is the Gippsland Lakes Ramsar Wetlands site, an internationally significant wetland, which intersects with the north-eastern boundary of the onshore Study Area just north of Seaspray (see Figure 10 in Attachment 1). An important criterion of the Ramsar listing of the Gippsland Lakes Ramsar site is the provision of habitat for nationally and internationally threatened flora and fauna. In addition, the Corner Inlet Ramsar site is located approximately 9 km west of the offshore Study Area at the nearest point, and approximately 18 km south-west from the nearest point of the onshore Study Area. The Corner Inlet Ramsar site supports several saltmarshes and mangroves. No Project infrastructure will be located within either of the Ramsar sites, however, there is potential for the Project to indirectly impact on the ecological values of the Gippsland Lakes and Corner Inlet Ramsar Wetlands sites; particularly with regard to collision risk for listed threatened and migratory species that use these Ramsar sites and may traverse the offshore wind farm.</p> <p>Other hydrological features within the search area (the Study Area with a 10 km buffer) include Lake Denison and Jack Smith Lake, as shown on Figure 17 in Attachment 1. Lake Denison is considered a site of regional significance primarily because the lake, barrier, bluff, and the lagoonal channels represent distinctive stages in the evolution of barrier and lagoon systems. Jack Smith Lake is considered a site of regional significance as a remnant of the extensive lagoon and inlet complex that extended from Merriman Creek south-west to Woodside Beach, as well as the similarities Jack Smith Lake has to Lake Reeve (part of the Gippsland Lakes Ramsar site). The coastal saltmarshes located to the north-east and south-west of Seaspray are also important hydrological features of the area.</p> <p>The onshore Study Area also includes approximately 18 km of the Ninety Mile Beach coastline. The entire length of Ninety Mile Beach is backed by dunes forming a coastal barrier which is critical in protecting the coastal plain from marine erosion and inundation. The beach also provides habitat for beach dwelling fauna such as shorebirds.</p> <p>The onshore Study Area is located within the Central Gippsland catchment system, with majority of the transmission route option 1 and the western extent of option 2 located within tributaries of the Latrobe River including Bennetts Creek, Traralgon Creek and Flynn’s Creek. The eastern end</p>

of transmission route option 1a and 1b and majority of transmission route option 2, is located within the catchment system for Merriman Creek and drains towards the east, discharging into McLoughlins Beach. This catchment system is part of the larger Seaspray catchment system.

Transmission route option 1a and 1b intersects with 13 main watercourses - Bennetts Creek, Waterhole Creek, Plough Creek, Boyds Creek, Traralgon Creek, Sheepwash Creek, Flynns Creek, Blind Joe Creek, Crooke Creek, Deep Creek, Carr Creek, Merriman Creek, Monkey Creek, as well as minor unnamed watercourses. Transmission option 2 intersects with five main watercourses - Flynns Creek, Merriman Creek, Bayliss Gully, Monkey Creek and Little Monkey Creek. The drainage lines to these watercourses flow in a general northerly direction, with Merriman Creek flowing east, through the Study Area.

Best practice construction activities would be adopted for the Project and implemented in accordance with the CEMP. This would ensure that any potential impacts to waterways, waterbodies and nearby wetlands are avoided and minimised as far as practicable. Environmentally sensitive construction measures will be implemented to ensure the Project's construction does not discharge wastewater and runoff to water environment. This will involve ensuring construction activities are effectively managed in accordance with EPA publications *1834: Civil construction, building and demolition guide* and *275: Construction Techniques for Sediment Pollution Control*. Further mitigation measures include the use of sediment control fences downstream of work areas, as well as constructing sediment basins to collect silty runoff and allow sediment to settle out prior to discharging.

Offshore

The offshore wind farm component of the Project is located in Commonwealth waters between Woodside Beach and Seaspray, off the Gippsland coastline in Bass Strait, within the south-eastern marine region. The region is generally considered to have low productivity, except for localised hotspots. Bass Strait is characterised by shallow water and weak tidal currents in comparison to surrounding marine environments. Due to the shallow depths, waters warm and cool more rapidly than surrounding waters. While there is a slow easterly flow of waters in Bass Strait, there is also a large anti-clockwise circulation. The navigational chart for the Study Area (GPS Nautical Charts) indicates the depth contours range from around 20 to 50 m and the substrate is a mix of sand and shell. Small areas of coral or reefs are indicated to be located to the north and east of the Study Area.

The offshore subsea cabling traverses both Commonwealth waters and State waters. Within State waters, the subsea cabling will be installed on the seabed and cross the shoreline either by trenchless construction or HDD. Seemap Australia mapping shows the nearshore environment along the coastline within the Study Area is homogenous and mapped as soft substrate with no visible biota. There is some seagrass and macroalgae mapped to the south-east of the Study Area within McLoughlins Beach - Seaspray Reserve.

The Ninety Mile Beach Marine National Park is located within the offshore Study Area, within Victorian coastal waters. No Project infrastructure will be located within Ninety Mile Marine National Park, with the subsea cabling to land either north or south of the marine park. The site was declared a marine national park to protect its unique sandy environment, which supports significant diversity of marine invertebrates (reported as one of the highest in the world), which in turn supports marine fauna including white sharks. The 'coastal wilderness' amenity of the beach is also a component of its value, particularly its uninterrupted beach and ocean views. In addition, the coast provides habitat for shore birds, including the threatened hooded plover.

Are any of these water environments likely to support threatened or migratory species?

NYD No Yes If yes, specify which water environments.

Onshore

As identified in Section 12 above, a range of threatened shorebirds, wetland birds, seabirds, and migratory bird species have potential to occur within the Study Area. Several wetlands and waterways in the area are of high value to a range of shorebirds and other wetland birds. In particular, the Gippsland Lakes and Corner Inlet Ramsar Wetland sites provide important habitat for numerous resident and migratory shorebirds. In addition, Lake Denison and Jack Smith Lake are areas of regional significance and provide important seasonal habitat for a number of migratory shorebirds.

The coastal habitat at Ninety Mile Beach is a highly dynamic environment which may not be suitable to all shorebird species. However, while it is unlikely that this area will support a high diversity and abundance of shorebirds, there are several migratory species which are known to utilise this area. In addition, the sandy beaches also provide habitat for some resident shorebirds.

Wetlands and surrounding waterways throughout the Study Area also provide habitat for a range of ichthyofauna and other aquatic species and may provide suitable habitat for threatened species such as Growling Grass Frog, Australian Grayling, and Dwarf Galaxias. Targeted surveys would be required to determine whether or not suitable habitat is present within the Study Area and if these threatened species are supported.

Offshore

The marine environment within the offshore Study Area is likely to provide habitat for a number of threatened marine fauna and migratory marine species, as identified in Section 12.

The Study Area is nominated to be a Biologically Important Area (BIA) for the following species:

- Sharks: nursery / breeding area for the white shark (*Carcharodon carcharias*)
- Whales: foraging habitat for pygmy blue whale (*Balaenoptera musculus brevicauda*), migration and resting areas for southern right whale (*Eubalaena australis*)
- Seabirds: short-tailed shearwater (*Ardenna tenuirostris*), wandering albatross (*Diomedea exulans*), white-faced storm-petrel (*Pelagodroma marina*), common diving-petrel (*Pelecanoides urinatrix*), Buller's albatross (*Thalassarche bulleri*), shy albatross (*Thalassarche cauta cauta*), Indian yellow-nosed albatross (*Thalassarche chlorohyphos bass*), black-browed albatross (*Thalassarche melanophris*) and Campbell albatross (*Thalassarche melanophris impavida*).

The offshore Study Area is within travel range of several Australian fur seal *Arctocephalis pusillus doriferus* and Long-nosed fur seal *A. fosteri* breeding colonies, with both of these fur seal species known to forage extensively throughout this area.

Southern Right Whales migrate between summer feeding areas in the Southern Ocean to inshore coastal waters off Australia. The offshore Study Area is mapped as a BIA for southern right whales with regular sightings of this species recorded within the Study Area. The offshore Study Area is also mapped as possible foraging area and a BIA for the Pygmy Blue Whale. This species migrates between these feeding aggregation areas in southern Australia and Western Australia to breeding grounds likely in Indonesia. The migratory route for the species along the east coast is not known, although acoustic records indicate that individuals do migrate along the east coast also. Foraging tends to occur in high primary productivity areas, such as coastal upwellings, which do not typically occur near the Study Area.

There are several records of threatened seabirds being present within both the onshore and offshore Study Area. The Study Area is mapped as a BIA for the Black-browed Albatross, Buller's Albatross, Campbell Albatross, Indian Yellow-nose Albatross, Shy Albatross, Wandering Albatross, and the Antipodean Albatross.

Albatross and petrel species largely breed in Antarctica and islands south of Australia and exhibit a broad range of diets and foraging behaviours, making their at-sea distributions diverse. All waters within Australian jurisdiction can be considered foraging habitat albatross and petrel species, however, the most critical foraging habitat is waters south of 25 degrees where most species spend the majority of their foraging time. Seabirds are known to feed on fish, cephalopod and / or crustaceans within the marine environment, diving to the surface water level or just below. This potentially makes them vulnerable to turbine strike.

There are a number of sightings of threatened turtle species along the coastline, including the Leatherback and Loggerhead turtles. They would be using the nutrient rich waters surrounding the site for feeding purposes, however nesting occurs further northwards. The Study Area is not likely to be considered key habitat for turtles.

Are any potentially affected wetlands listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'?

NYD No Yes If yes, please specify.

As identified above, the Gippsland Lakes Ramsar site intersects with the north-eastern boundary of the onshore Study Area just north of Seaspray, and includes Lake Reeve, Lake Coleman, and Lake Wellington. In addition, the Corner Inlet Ramsar Wetlands site is located approximately 9 km west of the offshore Study Area at the nearest point. No Project infrastructure will be located within either of the Ramsar sites, however, there is potential for the Project to indirectly impact on the ecological values of the Gippsland Lakes and Corner Inlet Ramsar Wetlands sites. Particularly with regard to collision risk for listed threatened and migratory species that use these Ramsar sites and may traverse both the onshore transmission route and the offshore wind farm. Indirect impacts such as sedimentation from ground disturbance works also have potential to alter the ecological conditions in downstream Ramsar sites.

Lake Wellington wetlands (part of which forms the Gippsland Lakes Ramsar Wetlands site) and Jack Smith Lake are listed as a Directory of Important Wetlands in Australia (DIWA). The Project would not directly impact on either of these DIWA wetlands, however, there is potential for indirect impacts on Jack Smith Lake, such as sedimentation impacts, as it is within proximity to the shoreline crossing of the Option 1 subsea cabling option. Construction activities and potential sedimentation impacts would be effectively managed in accordance with EPA publications 1834: *Civil construction, building and demolition guide* and 275: *Construction Techniques for Sediment Pollution Control*.

Could the project affect streamflows?

NYD No Yes If yes, briefly describe implications for streamflows.

The preferred transmission route is not confirmed however, the Project is not expected to significantly affect stream flows as the transmission line would be an overhead configuration which is unlikely to impact on waterway flow regimes.

Could regional groundwater resources be affected by the project?

NYD No Yes If yes, describe in what way.

Visualising Victoria's Groundwater data maps the depth to groundwater across the Study Area as ranging from less than five metres to greater than 50 m below ground surface (mbgs). Shallow groundwater is expected along the coastline, with the water table being mapped as less than five mbgs along coastal areas including Seaspray and Lake Denison. The water table depth then varies across the rest of the Study Area, with deeper groundwater (approximately 50 m to 100 m) mapped in areas south of Willung and north of Gormandale.

Groundwater bores within the Study Area generally range between 20 m up to 500 m, with limited numbers of shallow bores (less than 20 m deep) (Visualising Victoria's Groundwater).

The Project is not anticipated to impact on regional groundwater resources as only shallow excavations (typically less than 2 m) would be required for construction of the onshore transmission infrastructure. Any potential impacts would be highly localised and temporary.

Could environmental values (beneficial uses) of water environments be affected?

NYD No Yes If yes, identify waterways/water bodies and beneficial uses (as recognised by State Environment Protection Policies)

Based on Visualising Victoria's Groundwater mapping, the Study Area is classified as predominantly Segment A2 and B, with small areas mapped as Segment A1 and C, based on groundwater salinity (total dissolved solids (TDS)) according to the EPA Environment Reference Standard (ERS). Environmental values (previously known as beneficial uses) associated with these segments are outlined in **Table 13**.

Table 13: Groundwater environmental values

Environmental value	Segment (TDS mg/l)			
	A1 (0-600)	A2 (601-1,200)	B (1,201-3,100)	C (3,101 - 5,400)
Water dependent ecosystems and species	✓	✓	✓	✓

Potable water supply (desirable)	✓			
Potable water supply (acceptable)		✓		
Potable mineral water supply	✓	✓	✓	✓
Agriculture and irrigation (irrigation)	✓	✓	✓	
Agriculture and irrigation (stock watering)	✓	✓	✓	✓
Industrial and commercial use	✓	✓	✓	✓
Water-based recreation (primary contact recreation)	✓	✓	✓	✓
Traditional Owner cultural values	✓	✓	✓	✓
Buildings and structures	✓	✓	✓	✓
Geothermal properties	✓	✓	✓	✓

According to the ERS, surface waters within and surrounding the onshore Study Area are classified as part of the Central Foothills and Coastal Plans segment for inland waters. Environmental values associated with this segment include:

- Water dependent ecosystems and species that are slightly to moderately modified
- Agriculture and irrigation
- Human consumption of aquatic foods
- Industrial and commercial
- Water-based recreation (primary contact, secondary contact, and aesthetic enjoyment)
- Traditional Owner cultural values

Surface waters within the offshore Study Area (both Victorian coastal waters and Commonwealth waters) are classified as the Open Coast segment, and Gippsland (Two-Fold) sub-segment for marine and estuarine waters. This includes the surface waters of the open coast bounded by Wilsons Promontory and the New South Wales border and extending 12 nautical miles seaward from the high water mark. Environmental values associated with this sub-segment include:

- Water dependent ecosystems and species that are largely unmodified
- Human consumption of aquatic foods
- Industrial and commercial
- Water-based recreation (primary contact, secondary contact, and aesthetic enjoyment)
- Traditional Owner cultural values
- Navigation and shipping.

Groundwater environmental values are not likely to be affected by the Project due to the shallow excavations (typically less than 2 m) would be required for construction of the onshore transmission infrastructure. It is unlikely the Project would impact on environmental values of inland surface water, however, further assessment will be required to determine the potential for the Project to impact on marine and estuarine surface water environmental values.

Could aquatic, estuarine or marine ecosystems be affected by the project?

NYD No Yes If yes, describe in what way.

Terrestrial aquatic ecosystems are not likely to be affected by the Project. Construction of the onshore transmission infrastructure may result in temporary impacts, such as sedimentation and increased turbidity, however potential impacts would be avoided and minimised with the implementation of industry standard mitigation measures. Most waterway crossings will be via overhead transmission lines and towers (requiring groundworks) would be located as far from the waterway as possible.

The Project has potential to impact on coastal and estuarine ecosystems through the shoreline crossing of the subsea cabling. Trenching of this shoreline crossing and associated earthworks may also result in sedimentation and increased turbidity.

Impacts to marine ecosystems would primarily be associated with construction of the offshore component of the Project, such as disturbance of benthic habitat, decline in water quality and increased sedimentation from piling, potential noise and vibration impacts on marine fauna, as well as planned and unplanned discharges from vessels causing decline in water and sediment quality. During operation, the physical presence of subsea infrastructure may change sedimentation processes from scour.

Further assessment will be undertaken to determine potential impacts of the Project on aquatic, estuarine and marine ecosystems.

Is there a potential for extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems over the long-term?

No Yes If yes, please describe. Comment on likelihood of effects and associated uncertainties, if practicable.

Extensive and major effects on aquatic, estuarine or marine ecosystems are not expected over the long-term, with most significant impacts expected during the construction phase and being localised and short-term.

Potential impacts will be primarily related to construction of onshore transmission infrastructure, shoreline crossing activities, establishing turbine foundations and the laying of subsea cables. Ongoing operation of the Project would not result in long term impacts to these ecosystems.

Is mitigation of potential effects on water environments proposed?

NYD No Yes If yes, please briefly describe.

Mitigation measures outlined in **Section 12** are also relevant to mitigating the potential effects on terrestrial aquatic and water environments, in particular:

- Avoid locating onshore transmission infrastructure within proximity to any waterways or wetlands.
- Avoiding / minimising unnecessary duplication of infrastructure e.g. utilise existing easements to connect to existing transmission network, co-locate Project components with other infrastructure.
- Strategic use of horizontal directional drilling / boring rather than open trenching methods for underground cables, particularly in sensitive areas such as beach landings and when crossing waterways.
- Development of a Project specific CEMP which includes measures to avoid and minimise potential surface water impacts, such as sedimentation and surface water runoff.

Mitigation measures outlined in **Section 12** are also relevant to mitigating the potential effects on marine water environments, in particular:

- Undertake habitat mapping and avoid locating Project infrastructure within areas on sensitive benthic habitats
- Implement soft start procedures
- Utilise seasonal construction windows (this would vary dependent on species)
- Use safety zones / lookout
- Use go-slow procedures for vessels
- Undertake hull inspections of vessels used for construction and operation
- Source local vessels where practicable
- Implement standard ballast water management procedures
- Adhere to industry standard chemical storage, handling, and maintenance procedures
- Adhere to relevant water quality guidelines

- Compliance with maritime legislation for discharges to the marine environment
- Adhere to legislative requirements for biofouling
- Use vessel exclusion zones around operations
- Develop a spill response plan
- Standard hazardous material storage and management in accordance with best practice and associated maritime legislation
- Recovery of dropped object / waste where possible

Other information/comments? (eg. accuracy of information)

The information presented in this section is based on desktop assessment only. Field surveys will be undertaken to verify the species present, and a detailed assessment of potential Project impacts will be undertaken following confirmation of the Project design.

14. Landscape and soils

Landscape

<p>Has a preliminary landscape assessment been prepared? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please attach.</p> <p>No preliminary landscape assessment has been undertaken. However, a preliminary desktop visual assessment has been undertaken which included GIS mapping of sensitive receptors that are likely to be subject to views of the Project.</p> <p>Visual simulations have also been prepared by the Proponent, which have considered key viewpoints along the Gippsland coastline where the offshore wind turbines will be visible including Golden Beach, Seaspray, McGaurans Beach, Woodside Beach and McLoughlins Beach.</p> <p>The visual simulations are available on the Project website www.greatergippslandowp.com.au. This simulation demonstrates how the turbines will look like from 5 points off the coast during the day and at night. The process to create the 3D simulation is complex and involves the use of panoramic photographs (taken by a local photographer from a number of locations) trigonometry, data points and digital technology. The output is a realistic and scientifically rigorous visual representation of the Project. There is a video explaining how the simulations are produced available on BlueFloat Energy’s website www.bluefloat.com/projects/.</p> <p>An overview of these key viewpoints and simulated views from these locations is provided in Table 14 Error! Reference source not found., and are shown on Figure 18 in Attachment 1.</p> <p>Table 14: Key viewpoints</p> <table border="1"> <thead> <tr> <th>Key viewpoint</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Golden Beach</td> <td>Golden Beach is a coastal community located approximately 33 km north-east of the nearest offshore wind turbine. Golden Beach is located adjacent to the Gippsland Lakes Ramsar site and provides for a number of recreation activities including foreshore camping areas, picnic grounds, coastal walks, boating and fishing. The viewing platform on the shoreline provides panoramic views of the coastline. Visual simulations from Golden Beach indicate that the offshore wind turbines will be only slightly visible in the distance when looking south from the coastline.</td> </tr> <tr> <td>Seaspray</td> <td>Seaspray is a coastal community located approximately 20 km north of the nearest turbine within the offshore area of the Project. The underground cabling will land onshore just south of the Seaspray township. The Ninety Mile Beach is the main attraction within Seaspray, with other public open spaces including picnic grounds. Visual simulations from the viewing deck at Seaspray Surf Life Saving Club indicate that the offshore wind turbines will be visible when looking south from this location.</td> </tr> <tr> <td>McGaurans Beach</td> <td>McGaurans Beach is located within the McLoughlins Beach – Seaspray Coastal Reserve approximately 12 km from the nearest offshore turbine and is known for providing beachfront camping with direct ocean views. The coastline in this area is undeveloped and provides panoramic views of the seascape and coastline. Visual simulations from McGaurans Beach indicate that that offshore wind turbines will be visible from the coastline when looking east directly out to sea.</td> </tr> <tr> <td>Woodside Beach</td> <td>Woodside Beach is within the southern end of the Ninety Mile Beach at the Woodside township and it approximately 12 km from the nearest offshore turbine. Woodside beach provides for swimming, fishing, boating and surfing activities as well as coastal walks. Visual simulations from Woodside Beach indicate that that offshore wind turbines will be visible from the coastline when looking east directly out to sea.</td> </tr> <tr> <td>McLoughlins Beach</td> <td>McLoughlins Beach is one of the southernmost beaches within Ninety Mile Beach and is located within the Corner Inlet Ramsar site. It is approximately 17 km from the nearest offshore wind turbine. McLoughlins Beach provides for fishing, boating, and surfing activities as well as coastal walks and camping. Visual simulations from McLoughlins Beach indicate that that offshore wind turbines will be visible from the coastline when looking north-east out to sea.</td> </tr> </tbody> </table> <p>A detailed landscape and visual assessment will be undertaken to further inform design and as part of the environmental assessment.</p>		Key viewpoint	Description	Golden Beach	Golden Beach is a coastal community located approximately 33 km north-east of the nearest offshore wind turbine. Golden Beach is located adjacent to the Gippsland Lakes Ramsar site and provides for a number of recreation activities including foreshore camping areas, picnic grounds, coastal walks, boating and fishing. The viewing platform on the shoreline provides panoramic views of the coastline. Visual simulations from Golden Beach indicate that the offshore wind turbines will be only slightly visible in the distance when looking south from the coastline.	Seaspray	Seaspray is a coastal community located approximately 20 km north of the nearest turbine within the offshore area of the Project. The underground cabling will land onshore just south of the Seaspray township. The Ninety Mile Beach is the main attraction within Seaspray, with other public open spaces including picnic grounds. Visual simulations from the viewing deck at Seaspray Surf Life Saving Club indicate that the offshore wind turbines will be visible when looking south from this location.	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McLoughlins Beach	McLoughlins Beach is one of the southernmost beaches within Ninety Mile Beach and is located within the Corner Inlet Ramsar site. It is approximately 17 km from the nearest offshore wind turbine. McLoughlins Beach provides for fishing, boating, and surfing activities as well as coastal walks and camping. Visual simulations from McLoughlins Beach indicate that that offshore wind turbines will be visible from the coastline when looking north-east out to sea.												

Is the project to be located either within or near an area that is:

- **Subject to a Landscape Significance Overlay or Environmental Significance Overlay?**
 NYD No Yes If yes, provide plan showing footprint relative to overlay.

The onshore Study Area is not located within any area subject to a Significant Landscape Overlay. However, the Significant Landscape Overlay (Schedule 1 - Ninety Mile Beach) under the Wellington Planning Scheme applies to the Ninety Mile Beach approximately 8 km to the north-east of the Study Area. Schedule 1 - Coastal and Gippsland Lakes Environs) and Schedule 2 Wetlands of the Environmental Significance Overlay (under the Wellington Planning Scheme apply to the onshore Study Area.

There are no Significant Landscape Overlays or Environmental Significance Overlays under the Latrobe Planning Scheme that affect the onshore Study Area.

Table 15: SLO and ESO which are relevant to the Project

Planning Overlay	Objectives
Clause 42.03 – Significant Landscape Overlay (Schedule 1 - Ninety Mile Beach) (SLO1)	SLO1 applies to Ninety Mile Beach and aims to protect coastal vegetation, cultural heritage values, significant views and vistas, and to ensure that development does not impact landscape character and attributes.
Clause 42.01 – Environmental Significance Overlay (Schedule 1 - Coastal and Gippsland Lakes Environs) (ESO1)	ESO1 applies to coastal and Gippsland lake environs, which recognises the environs as some of the most significant environmental, landscape and recreational areas within the State of Victoria. ESO1 aims to ensure that development of land is compatible with the environmentally sensitive coastal area and to protect and enhance the visual amenity and landscape of the coastal area.
Clause 42.01 – Environmental Significance Overlay (Schedule 2 - Wetlands) (ESO2)	ESO2 applies to wetlands and aims to protect and enhance the values of wetlands through the control of development and implement legal and other obligations to protect and enhance plant and animal species and habitats.

Figure 8 in Attachment 1 shows the Planning Overlays that apply to the onshore Study Area and surrounds.

- **Identified as of regional or State significance in a reputable study of landscape values?**
 NYD No Yes If yes, please specify.

The Project is not located within an area that has been identified to be of regional or State significance for its landscape values or in an area declared as a distinctive area and landscape under Part 3AAB of the *Planning and Environment Act 1987*.

Project components are proposed to be located within, and parallel to Ninety Mile Beach, which has been classified as a landscape of State significance in the *Coastal Spaces Landscape Assessment Study* (Department of Sustainability and Environment, 2006).

Ninety Mile Beach is the longest stretch of uninterrupted beach in the country and the second longest in the world. The linear landscape has a combination of sandy beaches, low dunes, peninsulas, and wetlands. The landscape is characterised by large swathes of indigenous vegetation including coastal heath, mangroves, and dune grasses, and there are vast ocean views along its entirety.

- **Within or adjoining land reserved under the *National Parks Act 1975* ?**
 NYD No Yes If yes, please specify.

The following areas of land reserved under the *National Parks Act 1975* are located within the Study Area:

- Ninety Mile Beach Marine National Park
- Holey Plains State Park
- Gippsland Lakes Coastal Park

- **Within or adjoining other public land used for conservation or recreational purposes?**
 NYD No Yes If yes, please specify.

Several areas of public land used for conservation or recreational purposes are located within the Study Area, including:

- McLoughlins Beach – Seaspray Coastal Reserve
- Seaspray Public Purposes Reserve
- Lake Denison Wildlife Reserve
- Giffard (Rifle Range) Flora Reserve
- Mullundung State Forest
- Stradbroke Flora and Fauna Reserve
- Merrimans Creek Water Frontage
- Merrimans Creek Flora Reserve
- Gormandale Flora Reserve
- Flynns Creek Water Frontage
- Traralgon Creek Water Frontage
- Rosedale Racecourse and Recreation Reserve
- Crook Creek Frontage
- Gippsland Lakes Ramsar site.

Development and refinement of an overhead transmission line would seek to avoid these areas of public land used for conservation and recreation purposes as much as practicable.

- **Is any clearing vegetation or alteration of landforms likely to affect landscape values?**
 NYD No Yes If yes, please briefly describe.

The extent of vegetation clearing required for the Project has not yet been determined however, some vegetation clearing is likely for construction of the onshore transmission infrastructure. This has the potential to affect landscape values in surrounding areas. The Project is not expected to involve the alteration of landforms with significant impacts to landscape values. A detailed landscape and visual assessment will be undertaken to determine the potential of the Project to affect landscape values.

- **Is there a potential for effects on landscape values of regional or State importance?**
 NYD No Yes Please briefly explain response.

The offshore wind turbines would be located in Commonwealth waters, however there is potential for indirect landscape and visual impacts to occur within Victoria. Preliminary desktop mapping and visual simulations prepared for the Project indicate that the wind farm will be visible from a number of areas along the Gippsland coastline, including the Ninety Mile Beach. A detailed landscape and visual impact assessment will be undertaken following design development to determine the potential for significant changes to landscape values.

There is potential for some effects on landscape values of regional or State importance associated with State parks, forests and reserves within the onshore Study Area however, it is not considered likely these effects would be significant. The potential for impacts will be assessed through a detailed landscape and visual impact assessment.

- **Is mitigation of potential landscape effects proposed?**
 NYD No Yes If yes, please briefly describe.

The Project is still in the preliminary stages of development and has not been subject to a detailed landscape and visual assessment. Therefore, mitigation of potential landscape effects is not proposed at this stage of the Project. The need for mitigation of potential landscape and visual impact will be considered in the next stage of assessment and will form part of the detailed landscape and visual impact assessment.

Other information/comments? (eg. accuracy of information)

A landscape and visual impact assessment will be undertaken once the preferred project layout is finalised to assess potential impacts of the Project on visual amenity and landscape values.

Note: A preliminary landscape assessment is a specific requirement for a referral of a wind energy facility. This should provide a description of:

- The landscape character of the site and surrounding areas including landform, vegetation types and coverage, water features, any other notable features and current land use;
- The location of nearby dwellings, townships, recreation areas, major roads, above-ground utilities, tourist routes and walking tracks;
- Views to the site and to the proposed location of wind turbines from key vantage points (including views showing existing nearby dwellings and views from major roads, walking tracks and tourist routes) sufficient to give a sense of the overall site in its setting.

Soils**Is there a potential for effects on land stability, acid sulphate soils or highly erodible soils?**

NYD No Yes If yes, please briefly describe.

The Project is still in the preliminary design phase and detailed investigations into the potential for acid sulfate soils or highly erodible soils to be present are yet to be undertaken. A preliminary desktop assessment identified that coastal acid sulfate soils may be encountered by project works both onshore and offshore depending on geological and historical conditions of the site.

Coastal acid sulfate soils (CASS) occur naturally along many parts of Victoria's coastal zone, including Gippsland, and are largely benign if left undisturbed. However, if disturbed they can react with oxygen and produce sulfuric acid. This can be detrimental to the environment through impacts such as acidification of water and soil, de-oxygenation of water, and poor water quality. The generation of acid through inappropriate management of acid sulfate soils can also result in damage to concrete and steel.

A review of the Victorian Coastal Acid Sulfate Soil (VCASS) maps for Gippsland indicate the coastline within the onshore Study Area has potential to contain acid sulfate soils, as shown in **Figure 19 of Attachment 1**. A review of the Australian Soil Resource Information System (ARIS) Atlas of Australian Acid Sulfate Soils (AAASS) mapping indicates the potential for acid sulfate soil occurrence is low probability (with very low confidence) across most of the onshore Study Area, as shown in **Figure 20 of Attachment 1**. Along the coastal area of the Study Area, ARIS AAASS mapping indicates the potential for acid sulfate soil occurrence is extremely low probability (with very low confidence) with some areas of high probability (with very low confidence) surrounding Lake Denison. The Seaspray township is mapped as having low probability (with moderate confidence) of acid sulfate soil occurrence.

There is no mapping available to identify the presence of acidic or contaminated soils within the Victorian marine environment. Further environmental and geotechnical investigations would be required to determine the presence of offshore contamination and / or acid sulfate soils, and if so, the potential for impacts to occur.

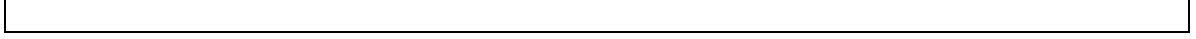
Construction activities such as excavation and trenching have potential to disturb acid sulfate soils, which can result in impacts on the surrounding environment such as leaching of acidic water into soil and groundwater.

Are there geotechnical hazards that may either affect the project or be affected by it?

NYD No Yes If yes, please briefly describe.

There are no known geotechnical hazards that may affect the Project or be affected by it. Further environmental investigations will be undertaken during the next stage of assessments.

Other information/comments? (eg. accuracy of information)



15. Social environments

Is the project likely to generate significant volumes of road traffic, during construction or operation?

NYD No Yes If yes, provide estimate of traffic volume(s) if practicable.

A traffic impact assessment has not yet been undertaken for the Project however, it is not considered likely that the Project would generate significant volumes of road traffic.

Construction of the Project would generate some traffic, including heavy vehicles and over dimensional vehicles during material delivery, which has the potential to impact on the local traffic and transport network. It is anticipated that main arterial roads, as well as some smaller roads, would primarily be used during construction. Large equipment that would be required for construction of the offshore component would be transported via ships or vessels, removing the need to use the local road network.

Operation of the Project would not generate significant volumes of road traffic, with traffic likely to be limited to light vehicles conducting maintenance activities.

An assessment of the existing road network's capacity to support increased traffic associated with the Project will be undertaken. The need for any road upgrades will be identified and a detailed Traffic Management Plan will be developed and implemented to ensure the Project's impacts on the road network are appropriately managed throughout both construction and operation. Mitigation measures will be developed and implemented in order to avoid and minimise impacts imposed on transport networks which will form environmental performance requirements (EPRs) of the planning approval.

Is there a potential for significant effects on the amenity of residents, due to emissions of dust or odours or changes in visual, noise or traffic conditions?

NYD No Yes If yes, briefly describe the nature of the changes in amenity conditions and the possible areas affected.

The Project is unlikely to have a significant effect on the amenity of residents, due to emissions of dust or odours or changes in visual, noise or traffic conditions. Amenity impacts related to noise and dust, will primarily be associated with the construction period.

Construction of Project components including the onshore transmission infrastructure, the subsea cable shoreline crossing, and any required road upgrades / modifications, have the potential to generate dust emissions. Potential dust impacts would be managed through implementation of a CEMP and relevant dust suppression mitigation measures, and are not likely to result in significant impacts on the amenity of residents. Vessels and barges used for construction of the offshore Project components would generate some exhaust emissions, however due to the distance offshore from any residents or sensitive receptors it is unlikely to result in amenity impacts.

Noise generating construction works have potential to impact on the amenity of nearby residents, however it is not anticipated that noise would cause significant amenity effects. Background (ambient) noise levels are expected to be low in the Study Area due to a high portion of the land use being agricultural and nature reserves rather than urban settings. There are limited numbers of sensitive receptors along the proposed transmission route, reducing the potential for noise related amenity impacts. An assessment of the potential for construction noise to impact on the amenity of nearby residents will be undertaken as part of the next phase of the environmental investigations.

Temporary restrictions on road and / or property access may occur during construction of the onshore transmission infrastructure, however, this would not cause significant effects on residents and would only be for short periods of time. Potential changes to access and traffic conditions during construction will be undertaken in the next phase of assessment. Any changes would be managed through a Traffic Management Plan, including providing alternative access options and ensuring advanced communication with residents is undertaken.

It is likely that construction would result in temporary visual changes to local residents, however, this is not likely to result in significant effects on amenity.

Is there a potential for exposure of a human community to health or safety hazards, due to emissions to air or water or noise or chemical hazards or associated transport?

NYD No Yes If yes, briefly describe the hazards and possible implications.

As discussed above, there is potential for air and noise emissions to occur during construction of the Project however, these will be managed through a CEMP. This CEMP, accompanied with the implementation of industry standard mitigation measures, mean that it is not expected that impacts on the health of the community will occur. Any hazardous materials or chemicals used during construction and / or operation would be managed through a CEMP and is not considered to pose a threat to the health and safety of the community.

Is there a potential for displacement of residences or severance of residential access to community resources due to the proposed development?

NYD No Yes If yes, briefly describe potential effects.

The onshore transmission infrastructure is not anticipated to displace any residences or block residential access to community resources, however temporary access disruptions may occur during construction works.

Any disruptions would be managed through a Traffic Management Plan and are not likely to be significant.

Are non-residential land use activities likely to be displaced as a result of the project?

NYD No Yes If yes, briefly describe the likely effects.

No non-residential land use activities are likely to be displaced as a result of the Project.

Land uses within the onshore component are predominantly agriculture and forestry plantation, with areas of conservation reserves. Displacement of these activities will not occur and will be assessed within a land use impact assessment and agricultural land assessment to determine the potential for any significant impacts on continued land use operations and any loss of productivity.

Safety exclusion zones will be established around infrastructure within the marine environment (wind turbines, substations) during construction and operation. Exclusion zones would be much smaller during operation and are not likely to have a significant effect on marine users. The coexistence of activities in the marine environment is a core principle of the operation of offshore wind farms.

There may be some restrictions on boating and recreational activities during construction of the shoreline crossing and installation of the subsea cables. An assessment of the potential impacts on marine users and potential exclusion zones during construction and operation will be undertaken in the next phase of assessment.

Do any expected changes in non-residential land use activities have a potential to cause adverse effects on local residents/communities, social groups or industries?

NYD No Yes If yes, briefly describe the potential effects.

A socio-economic impact assessment will be undertaken to determine the potential for adverse effects on non- residential land use activities within the Study Area.

Is mitigation of potential social effects proposed?

NYD No Yes If yes, please briefly describe.

Mitigation of potential social effects will be identified and assessed through a detailed impact assessments to be undertaken in the next phase of Project development. Potential amenity-related impacts would be mitigated through implementation of a CEMP, a Traffic Management Plan and Worker Accommodation Plan alongside active, regular engagement with the local community.

Further assessment of potential social impacts will be undertaken through a socio-economic impact assessment, with the development of tailored mitigation measures specific to the Project and local region to manage potential social effects.

Other information/comments? (eg. accuracy of information)

Cultural heritage

Have relevant Indigenous organisations been consulted on the occurrence of Aboriginal cultural heritage within the project area?

- No If no, list any organisations that it is proposed to consult.
 Yes If yes, list the organisations so far consulted.

The Study Area contains various cultural heritage sensitivity including coastal Crown land and Sea Country.

The Proponents have commenced consultation with the RAP for that part of the Study Area which falls within the Victorian jurisdiction, GLaWAC, which is representative of the Gunaikurnai People.

A comprehensive consultation process with GLaWAC will be undertaken and coordinated with the production of the Project CHMP in accordance with *Aboriginal Heritage Act 2006* and the *Commonwealth Underwater Cultural Heritage Act 2018* requirements.

What investigations of cultural heritage in the project area have been done?

(attach details of method and results of any surveys for the project & describe their accuracy)

A Preliminary Desktop Cultural Heritage Constraints Assessment has been undertaken by Umwelt (2022) to identify potential Aboriginal and non-Aboriginal cultural heritage constraints present within the Study Area and to provide a preliminary assessment of potential impacts. No field surveys were undertaken for this assessment.

The Preliminary Desktop Cultural Heritage Constraints Assessment involved the following key steps:

- Review of Commonwealth and Victorian state legislative and statutory requirements and non-statutory considerations regarding Aboriginal and non-Aboriginal cultural heritage, as relevant to the Project
- Review of relevant statutory (Commonwealth, State and Local government) and non-statutory cultural heritage database and mapping systems to identify the existing registered cultural heritage values within the Study Area. This includes online searches of:
 - The Victorian Aboriginal Heritage Register (VAHR) for registered Aboriginal sites and areas of cultural heritage sensitivity within the Study Area
 - Register of Native Title Claims for any current Native Title applications / determinations or relevant Indigenous Land Use Agreements (ILUAs) that may cover the Study Area
 - The Australasian Underwater Cultural Heritage Database, Australian Heritage Database, National Trust Heritage Register (Victoria), Victorian Heritage Register and Inventory, Victorian War Heritage Inventory and relevant Heritage Overlays for registered non-Aboriginal ('historical') cultural heritage sites within the Study Area
- Preparation of a brief general site context for the Study Area covering environmental and archaeological backgrounds, including extent and nature of previous disturbance undertaken via a review of available historical aerial imagery
- Preparation of a predictive statement identifying the potential for non-registered cultural heritage values to exist within the Study Area, based on the provided site context
- Identification of potential impacts on existing heritage values within the Study Area, including registered values as well as non-registered (predicted / potential) heritage values identified within the predictive statement.

Refer to **Attachment 6** for further details on the Preliminary Desktop Cultural Heritage Constraints Assessment.

Is any Aboriginal cultural heritage known from the project area?

- NYD No Yes If yes, briefly describe:
- Any sites listed on the AAV Site Register

- Sites or areas of sensitivity recorded in recent surveys from the Project site or nearby
- Sites or areas of sensitivity identified by representatives of Indigenous organisations

A total of 157 registered Aboriginal Places (Aboriginal cultural heritage sites registered on the Victorian Aboriginal Heritage Register (VAHR)) are located within the Study Area. The types of sites within the Study Area include artefact scatters, earth features, shell middens, low density artefact distributions (LDADs), Aboriginal ancestral remains (burials), object collection, and scarred trees. A summary of these sites is presented in **Table 16** Error! Reference source not found., and shown in **Figure 15** of **Attachment 1**.

Table 16: Summary of Registered Aboriginal Places within the Study Area

Site Type	Number of Sites
Aboriginal Ancestral Remains (Burials)	2
Artefact Scatter	53
Earth Feature (Soil Deposit)	3
Low Density Artefact Distribution	68
Scarred Tree	5
Shell Midden	13
Total	157

The desktop assessment also identified multiple areas of cultural heritage sensitivity (CHS) within the Study Area, shown in **Figure 15** of **Attachment 1**. As per criteria set out in Division 3 of Part 2 of the Aboriginal Heritage Regulations 2018, areas of CHS within the Study Area include:

- The registered Aboriginal Places (as per Error! Reference source not found.) plus land within 50 m of them (Reg 25) (any part of the area 50 m from the registered Aboriginal Place that has been subject to significant ground disturbance will not be an area of CHS)
- Several named waterways including Sheepwash Creek, Flynn's Creek, Blind Joe Creek, Merriman Creek, Waterholes Creek, Kangaroo Creek, Bayliss Gully, Monkey Creek, Little Monkey Creek, Mason Creek, Lake Denison, Redmond Lake, and Lake Reeve plus land within 200 m of them (Reg 26) (any part of the waterway or area 200 m from the waterway that has been subject to significant ground disturbance will not be an area of CHS)
- The Gippsland Lakes Ramsar wetlands in the northeast of the Study Area (declared Ramsar wetlands) plus land within 200 m of it (Reg 29) (any part of the Ramsar wetland or the area 200 m from the Ramsar wetland that has been subject to significant ground disturbance will not be an area of CHS)
- Coastal Crown land (Reg 30) (any part of the coastal Crown land that has been subject to significant ground disturbance will not be an area of CHS)
- Land within 200m of the high-water mark of the coastal waters (coastal land) (Reg 31) (any part of the area 200 m of the high-water mark that has been subject to significant ground disturbance will not be an area of CHS).
- Dune deposits, as identified in the Surface Geology of Victoria 1:250 000 map book by unit code "Qd2", occurring across parts of the Study Area between Seaspray and Gormandale (dunes) (Reg 40) (any dune deposit that has been subject to significant ground disturbance will not be an area of CHS).

Are there any cultural heritage places listed on the Heritage Register or the Archaeological Inventory under the *Heritage Act 1995* within the project area?

NYD No Yes If yes, please list.

A search of the Victorian Heritage Database also confirmed there are no non-Aboriginal cultural heritage values within the onshore Study Area listed on the Victorian Heritage Register or the Archaeological Inventory under the *Heritage Act 1995*.

Searches were also undertaken of the, Victorian Heritage Inventory, Victorian War Heritage Inventory, Latrobe Planning Scheme Heritage Overlay, and the Wellington Planning Scheme Heritage Overlay and the non-statutory National Trust Heritage Register (Victoria). No non-Aboriginal cultural heritage values were identified.

A search of the Australasian Underwater Cultural Heritage Database (AUCHD) confirmed that there are non-Aboriginal cultural heritage values within the offshore Study Area; three shipwrecks located offshore, as listed in Table 17. Error! Reference source not found..

Table 17: Sites on the AUCHD within the Study Area

Shipwreck ID Number	Vessel Name	Year Wrecked
6231	SS Glenelg	1900
6386	Magnolia	1887
6700	Unidentified	Unknown

The location of these shipwrecks is shown on **Figure 16 of Attachment 1**.

Is mitigation of potential cultural heritage effects proposed?

NYD No Yes If yes, please briefly describe.

Detailed mitigation measures will be developed to address potential impacts on Aboriginal and non-Aboriginal cultural heritage values during the detailed impact assessment phase. Preliminary mitigation for potential impacts on cultural heritage include:

- Design the onshore transmission infrastructure to avoid areas of cultural heritage sensitivity, in particular proximity to waterways, as waterways plus land within 200 m of them are considered areas of cultural heritage sensitivity
- Avoid locating turbines or undertaking construction works within any shipwreck exclusion zones

A cultural heritage management plan (CHMP) will be prepared for the Project which will contain site-specific procedures to be implemented to manage impacts on known Aboriginal cultural heritage material, as well as measures to implement should unexpected Aboriginal cultural heritage material be encountered during Project works.

A cultural values assessment will also be undertaken for the Project, to be agreed with the RAP group, to assess the potential impacts of the Project on the cultural values of the area.

Other information/comments? (eg. accuracy of information)

The information presented in this section is based on desktop assessment only – Refer to **Attachment 6**. A detailed assessment of potential Project impacts on cultural heritage will be undertaken following confirmation of the Project design.

16. Energy, wastes & greenhouse gas emissions

<p>What are the main sources of energy that the project facility would consume/generate?</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Electricity network. If possible, estimate power requirement/output <input checked="" type="checkbox"/> Natural gas network. If possible, estimate gas requirement/output <input checked="" type="checkbox"/> Generated on-site. If possible, estimate power capacity/output <input checked="" type="checkbox"/> Other. Please describe. <p>Please add any relevant additional information.</p> <p>The Project will generate up to 2.085 GW of renewable electricity to supply into the NEM.</p> <p>The onshore substation may consume a minimal amount of electricity for operations such as lighting and security, which will be drawn from the NEM. During construction, some energy may need to be generated onsite (e.g., along the transmission route) to power machinery / equipment. If required, this is likely to be in the form of temporary diesel generators.</p>
<p>What are the main forms of waste that would be generated by the project facility?</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Wastewater. Describe briefly. <input checked="" type="checkbox"/> Solid chemical wastes. Describe briefly. <input checked="" type="checkbox"/> Excavated material. Describe briefly. <input checked="" type="checkbox"/> Other. Describe briefly. <p>Please provide relevant further information, including proposed management of wastes.</p> <p>The majority of waste associated with the Project will be generated during construction and is likely to include drilling spoil from offshore and general construction waste (mixed materials such as woods, plastics, building chemicals, wastewater). Material excavated during construction would be either reused on site where practicable or taken to an off-site licenced waste facility.</p> <p>The Project is not anticipated to generate any significant volumes of waste during operation, however, some hazardous and chemical wastes may be generated during construction and maintenance activities associated with the Project (e.g., oily filters / rags, waste oil etc.).</p> <p>Marine vessels required for construction will likely generate a stream of wastewater including effluent and bilge pump sources. A waste management plan will be developed and implemented for the Project. Potential quantities and management techniques for waste will be determined during Project design.</p>
<p>What level of greenhouse gas emissions is expected to result directly from operation of the project facility?</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Less than 50,000 tonnes of CO₂ equivalent per annum <input checked="" type="checkbox"/> Between 50,000 and 100,000 tonnes of CO₂ equivalent per annum <input checked="" type="checkbox"/> Between 100,000 and 200,000 tonnes of CO₂ equivalent per annum <input checked="" type="checkbox"/> More than 200,000 tonnes of CO₂ equivalent per annum <p>Please add any relevant additional information, including any identified mitigation options.</p> <p>Greenhouse gas emissions are expected to be generated by the Project during manufacturing, construction, transport and shipping, and decommissioning. However, the operation of the project would not generate greenhouse gas emissions and is anticipated to displace approximately 7 million tonnes of carbon dioxide.</p>

17. Other environmental issues

<p>Are there any other environmental issues arising from the proposed project?</p> <p><input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, briefly describe.</p>

18. Environmental management

What measures are currently proposed to avoid, minimise or manage the main potential adverse environmental effects? (if not already described above)

Siting: Please describe briefly

Design: Please describe briefly

Environmental management: Please describe briefly.

Other: Please describe briefly

Add any relevant additional information.

At this stage of the Project development, the location and design have been largely influenced by wind resource and proximity to electricity network connections, whilst key environmental assets such as Ramsar sites and Marine National Parks have been avoided. The environmental and technical studies now underway or soon to commence will provide much greater detail on the environmental constraints and opportunities. As with the desktop assessment outcomes, design risks and opportunities will continue to be considered at each stage, to enable a suitable design response to avoid, minimise and manage environmental effects, where possible. The commencement of field surveys to ground-truth the desktop assessments and completion of impact assessments will provide further opportunity for project development incorporating mitigation and management.

The Project is currently investigating the following design and construction approaches to avoid and minimise environmental effects which will be further informed by field studies, impact assessments and construction assessments:

- Utilising existing infrastructure corridors (pre-cleared) where possible
- Prioritising shared infrastructure routes where possible e.g. G-REZ
- Prioritising a bored shore crossing for the subsea cable to land transition (not open trenched)
- Investigating underground cabling from the shore landing to the indicative location of the substation at Giffard (rather than overhead transmission) with the potential to bore rather than open trench within the sensitive coastal dune and wetland habitats nearby
- Investigating bored (trenchless) crossings of sensitive waterways and habitats
- Utilising existing facilities for construction offices, laydown areas and parking where available in the local area to avoid need for additional infrastructure

A Construction and Operation Environmental Management Plan (CEMP and OEMP) would be prepared and implemented for the Project including all components onshore and offshore. This would include measures to continue to avoid and minimise environmental impacts, including ongoing monitoring and management measures, responsibility, training of staff and reporting.

Construction compounds, offices, laydowns, access tracks and other requirements would be developed further at the detailed design stage, with assumptions included in the impact assessment for planning purposes. Adequate allowance along the transmission corridor, cable route and at the onshore substation will be considered in the impact assessment. This will be influenced by land use and ownership, technical requirements and environmental constraints.

A mandatory CHMP will be required to be prepared under the *Aboriginal Heritage Act 2006* for the Project as the Project will entail high impact activities (as that term is defined in the Act) in areas of cultural heritage sensitivity. A CHMP would also be mandatory if an EES is required for the Project. The CHMP will be prepared in consultation with the GLaWAC, who will need to approve the CHMP to enable compliance with the *Aboriginal Heritage Act 2006*. Mitigation measures to manage the impacts of the Project on any Aboriginal cultural heritage present in the Project Area are not yet proposed, however these will be included as part of the CHMP.

A preliminary marine assessment identified a range of mitigation measures which will be implemented throughout the Project to reduce the environmental impacts identified. Ongoing

environmental management and monitoring will be required in accordance with *Offshore Electricity Infrastructure Act 2021* conditions and will be defined at a later stage.

19. Other activities

Are there any other activities in the vicinity of the proposed project that have a potential for cumulative effects?

NYD No Yes If yes, briefly describe.

There are a number of other proposed onshore and offshore projects within the Gippsland region. Other offshore wind projects include Star of the South, Seadragon Offshore Wind Farm, and Great Eastern Offshore Wind Project.

Other projects located off the Gippsland coastline include the proposed CarbonNet Project Pelican site, Marinus Link, and Golden Beach Gas Project. Several onshore projects are also proposed within the region including Gippsland Energy Renewable Park, Gippsland Regional Port Project, and G-REZ.

All of these projects will be subject to their own EES process.

There is potential for cumulative impacts to occur, and a detailed assessment will be undertaken for the Project that will identify all relevant projects and the potential for cumulative impacts

20. Investigation program

Study program

Have any environmental studies not referred to above been conducted for the project?

No Yes If yes, please list here and attach if relevant.

Has a program for future environmental studies been developed?

No Yes If yes, briefly describe.

A program for future environmental and technical studies is currently being developed for the Project and will include (but not be limited to) the following:

- Terrestrial biodiversity field studies: commencing with a site inspection (habitat mapping) then targeted surveys including seabirds, shorebirds, terrestrial birds, fauna and flora (to commence in early 2023)
- Terrestrial biodiversity impact assessment
- Marine field studies: commencing with benthic habitat mapping in 2023, water quality and metocean data, followed by sediment quality, benthic flora, invertebrate, fish and marine megafauna studies
- Marine environmental impact assessment
- Marine geotechnical investigations
- Underwater noise and vibration monitoring and assessment
- Noise and vibration (onshore) monitoring and impact assessment
- Seascape, landscape and visual impact assessment (with photomontages)
- Social impact assessment
- Economic impact assessment
- Agricultural impact assessment
- Cultural heritage management plan (CHMP)
- Cultural values assessment
- Aboriginal cultural heritage and historic heritage impact assessment

- Surface water impact assessment
- Contaminated land and soil impact assessment
- Land use and planning impact assessment
- Air quality impact assessment
- Traffic and transport impact assessment
- EMI impact assessment
- Bushfire risk assessment
- Greenhouse gas and climate change impact assessment
- Aviation impact assessment
- Safety, hazard and risk assessment
- Shipping and navigation assessment

Consultation program

Has a consultation program conducted to date for the project?

No Yes If yes, outline the consultation activities and the stakeholder groups or organisations consulted.

Authentic and respectful partnerships and consultation with all stakeholders will form an integral and vital role in the development of the Project. The Project will prepare a Stakeholder and Engagement Strategy will enable genuine partnerships and open communication between the Proponents, Traditional Owners and all stakeholders over the life of the Project. It will also seek to create social value by delivering outcomes that benefit Traditional Owners and local communities, through social, economic, and environmental means.

The Project will 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.

Consultation has been undertaken with the DELWP and the DCCEEW through pre-referral meetings and discussions which provided an overview of the Project, indicative timeframes and studies proposed. The Proponents held the first public drop-in session for the Project at the Seaspray Hall and hosted a public webinar during the first week of October 2022.

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

The Project's approach to Traditional Owners is one of partnership as well as consultation. Preliminary consultation has also been undertaken with the RAP for the area, the GLaWAC. It is focussed on communication and providing updates, on exploring partnerships and opportunities, understanding their relationship to the land and sea and hear their stories, minimise impacts on the cultural and heritage importance and ensuring involvement in project design, construction and procurement.

Engagement activities will include, but not be limited to:

- Website, Project email address, mobile number and postal address
- Community advisory group
- Flyers and newsletters and information material including FAQs and Fact sheets
- Milestone site events
- Community and Public Information sessions and open days
- Digital stakeholder platform (engagement register and issues tracker)

- Local office
- Incident and complaint mechanism and register
- Local supplier, talent and contractor database
- Maps and visual aids including a preliminary visual impact simulation
- Media releases
- Posters and signage
- Social media
- Sponsorship
- Telephone calls

While some of these are already underway, a number of activities are currently being developed and programmed.

The Proponents recognise that there are a number of other projects, both onshore and offshore, that are currently proposed for the region. It is understood that there will be significant demands placed upon communities due to concurrent consultations and large volumes of information being produced for each of these Projects.

Has a program for future consultation been developed?


NYD No Yes If yes, briefly describe.

A program is in the process of being developed although a number of activities are currently underway including engagement with regulators and a website and email address developed.

The Proponents recognise that there are a number of other projects, both onshore and offshore, that are currently proposed for the region. We recognise that there will be significant demands placed upon communities in regards to concurrent consultations and large volumes of information being produced for each of these Projects.

Authorised person for proponent:

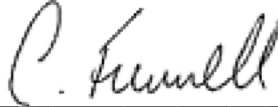
I, ...Deb Neumann (full name), Director, Environment and Planning, BlueFloat Energy...(position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature 

Date 12 December 2022

Person who prepared this referral:

I, ...Caroline Funnell.....(full name), Principal Environmental Consultant, Umwelt.....(position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature 

Date 12 December 2022