

EPBC Act referral



Australian Government
Department of Agriculture, Water and the Environment

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Title of proposal	2020/8650 - Star of the South Offshore Wind Farm Project the Project
Section 1	
Summary of your proposed action	
1.1 Project industry type	Energy Generation and Supply (renewable)
1.2 Provide a detailed description of the proposed action, including all proposed activities	<p>Star of the South Wind Farm Pty Ltd (ABN 71623105091) as Trustee of the Star of the South Trust (ABN 68239717297) proposes an offshore wind farm, supporting electricity transmission assets required to transfer energy generated by the wind farm to the existing network, and modifications to ports and harbours required to support the construction and operation of the wind farm.</p> <p>The design of the Project is evolving based on investigations into technical feasibility and commercial viability and will continue to be refined in response to environmental and social impacts identified as well as the consultation process. Attached Figures 1-4 provide an overview of the 'referral area', within which the Project components would be located. An early concept illustration is included in Figure 5.</p> <p>MAIN PROJECT COMPONENTS</p> <p>Offshore wind assets</p> <ul style="list-style-type: none">- Up to 400 Wind Turbine Generators (WTGs)- Substructures each installed on foundations, with associated scour protection if required- A network of buried or mechanically protected (in areas where burial is not possible), subsea cables connecting strings of WTGs together and connecting the WTGs to the offshore transmission assets <p>Typical parameters of a wind turbine are shown in Figure 6.</p> <p>Offshore transmission assets</p> <ul style="list-style-type: none">- Up to four Alternating Current (AC) substation platforms collecting the generated electricity and transforming the electricity for transmission to shore- Substructures each installed on foundations, with associated scour protection if required- Up to 13 AC subsea export cables, buried (up to 5m deep) or mechanically protected (in areas where burial is not possible), transmitting the electricity from the wind farm to the shore <p>Onshore transmission assets</p> <ul style="list-style-type: none">- Underground cable/combined underground cable and overhead powerlines- Up to four AC substations- Connection to the National Electricity Market in the Latrobe Valley <p>The offshore export cables would connect to onshore electrical transmission infrastructure at the transition joint bays, located landward of mean high water springs from the shore crossing site. Two crossing sites have been identified at Reeves Beach and McGaurans Beach, with the preferred to be selected following further design development.</p> <p>Currently there are three corridors under consideration as the potential locations for the onshore transmission infrastructure with the final option subject to design development and discussions with project stakeholders. These are shown in Figure 1 as 'western', 'eastern' and 'northern' corridors. The transmission infrastructure is anticipated to be predominantly below ground. A section of overhead transmission line will be required to connect the cable to the network connection point. The extent of overhead transmission line will be known when the design is further progressed. The network connection point is expected to be in the proximity of Loy Yang Power Station and/or Hazelwood Terminal Station. Up to four onshore substations are required for transmission, the largest having a footprint of up to a maximum of 400x400 metres.</p> <p>Existing port and harbour modifications</p> <p>Ports and harbours within close proximity will be required to support construction and operation of the project. In relation to construction activities, the options presented in this referral are the utilisation of the Port of Hastings (PoH), Barry Beach Marine Terminal (BBMT) and Port Anthony.</p> <p>Works at the ports would include landside development to prepare land for manufacturing and storage facilities for the wind farm. The existing jetty at PoH may require strengthening and widening which may require some piling works in the water in the immediate vicinity of the existing jetty. At BBMT structural improvements to a quay wall may be required however it is anticipated that these works would be undertaken from the landside area.</p> <p>Other existing port and harbour facilities could also be utilised to support construction and operation activities. Vessel to</p>



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vessel transfer of parts may be required during construction and/or operation.

Ancillary components

Ancillary components may be required to support the Project (such as storage facilities, site offices, and navigation and monitoring devices). The type, number and positions will be confirmed during development of the Project and in consultation with the relevant authorities.

CONSTRUCTION

Pre-construction preparatory works will be necessary and include both offshore and onshore site preparation, such as seabed preparation and vegetation clearance.

Offshore wind and transmission asset construction

- Installation of foundations, substructures and subsea electrical cables at turbine and offshore substation locations
- Installation and commissioning of the WTGs and offshore substations laying, connecting (to substructures once installed) and burying/protection of the export cables (including trenching)
- Cable pull-in from sea to land using trenchless installation technique (subject to further technical feasibility studies)
- Provision of specialist installation vessels

Onshore transmission asset construction

Shore crossing:

- Establishment of a temporary shore crossing construction site including site office, hard stand areas and construction compounds (anticipated to be in the order of four hectares and subject to further design detail)
- Excavation of transition pits and temporary storage of excavated materials
- Export and onshore cable jointing at transition pits.

Transmission asset construction:

- Establishment of temporary site offices, hard stand areas and construction compounds
- Excavation of cable trenches, installation of cable ducts, construction and installation of joint bays, installation of tower foundations and structures (if above ground) and cable connection and commissioning at substations
- Reinstatement works such as landscaping

Existing port and harbour modification construction

- Use of existing deep channel port for import/transfer of materials
- Use of existing berthing facilities for jack-up vessels
- Preparation works on road access routes to ports location
- Establishment of site offices, hard stand areas and construction compounds
- Minor modifications to the jetty at PoH, which may require some piling in the water to strengthen and widen the jetty
- Structural improvements to the BBMT quay wall (if required) undertaken from landside
- Progressive rehabilitation of the sites and landscaping

OPERATION

The design and operational life of the Project is indicatively up to 50 years. During this period activities would include:

- Operation and maintenance of on- and offshore infrastructure and facilities
- Use of BBMT, Port Anthony or other port and harbour facilities by maintenance vessels
- Use and maintenance of onshore buildings and plant
- Ongoing environmental management and monitoring in accordance with relevant approval conditions

DECOMMISSION

At the end of the operation phase of the Project, it is envisaged that offshore structures would be removed. Offshore cabling would likely be left in situ to avoid impacts to the environment. Onshore underground cables would potentially be left in the ground with the cable ends cut, sealed and securely buried as a precautionary measure. Above ground transmission infrastructure will be dismantled. Port and harbour facilities are likely to be repurposed for other offshore activities.

1.3 What is the extent and location of your proposed action?

See Appendix B

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland)

The proposed offshore wind farm is located between approximately seven and 26 kilometres off the coast of central Gippsland, within Commonwealth waters. The proposed boundary of the wind farm is defined by the Exploration Licence Area



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(the Licence Area) (under a licence granted by the Commonwealth Government), which comprises an area of 496 square kilometres (Figure 1).

The proposed wind farm will transmit electricity, via offshore cables, to shore in the vicinity of Reeves Beach and/or McGaurans Beach. Onshore transmission infrastructure will then transmit electricity from the coast of central Gippsland to the Latrobe Valley through rural areas within the Shire of Wellington and City of Latrobe (Figure 2). Port of Hastings (Figure 3) is located within the Shire of Mornington Peninsula. BBMT and Port Anthony are located within the Shire of South Gippsland. BBMT and Port Anthony are immediately adjacent sites and share the same channel (Figure 4).

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

135,576 ha - referral area, not project footprint.

Consisting of:

- Offshore wind farm: 49,642 ha
- Export cable area: 35,932 ha
- Onshore transmission corridors: 49,373 ha total. Each option approximately:
 - o Western: 28,834 ha
 - o Eastern: 32,379 ha
 - o Northern: 30,364 ha
- BBMT and Port Anthony: 81 ha
- Port of Hastings: 548 ha

A width of between approximately three and five kilometres has been included within the referral area for each potential onshore transmission route corridor. Using a wide corridor for the potential electrical transmission routes provides flexibility for route selection, which will be undertaken in response to environmental, land use and topographical constraints, consultations and wind farm design and electrical requirements. It is anticipated that through further design, the onshore transmission route corridor would be reduced to a footprint with a width of less than 100 metres.

1.7 Proposed action location

Other - Offshore in Victorian coastal waters and Commonwealth waters. Onshore in Victorian jurisdiction.

1.8 Primary jurisdiction Commonwealth Marine

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

Yes No

1.10 Is the proposed action subject to local government planning approval?

Yes No

1.10.1 Is there a local government area and council contact for the proposal?

Yes No

1.10.1.0 Council contact officer details

1.10.1.1 Name of relevant council contact officer	Wellington Shire Council – David Morocom (CEO); Latrobe City Council – Steven Piasente (CEO)
1.10.1.2 E-mail	David.morocom@wellington.vic.gov.au
1.10.1.3 Telephone Number	David Morocom (CEO) - 1300 366 244; Steven Piasente (CEO) - 1300 367 700

1.11 Provide an estimated start and estimated end date for the proposed action

Start Date	01/01/2023
End Date	31/12/2070

1.12 Provide details of the context, planning framework and state and/or local Government requirements



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The referral area spans Commonwealth waters and Victorian coastal waters and land areas. The Commonwealth, Victorian and local government requirements applicable to the project are outlined below.

Commonwealth Legislation

- Environment Protection and Biodiversity Conservation Act 1999

Victorian Legislation

- Aboriginal Heritage Act 2006
- Marine and Coastal Act 2018
- Planning and Environment Act 1987

A range of secondary approvals would be required under Victorian legislation to implement the project.

The traditional custodians of the referral area are the Gunaikurnai, who also are the registered native title holders of land within or in the vicinity of the project area. Gunaikurnai hold certain procedural and other statutory rights under the Native Title Act 1993 (Cth) and the Traditional Owners Settlement Act 2010 (Vic).

The onshore transmission assets are proposed within the local government areas of Latrobe City and Wellington. The proposed port locations of the Port of Hastings, BBMT and Port Anthony are within the local government areas of Mornington Peninsula and South Gippsland respectively.

The Victorian Planning Policy Framework key clauses that will be considered for this project include but are not limited to the following:

- Clause 11 Settlement, including Clauses 11.03-4 Coastal Settlement
- Clause 12 Environmental and Landscape values, including Clause 12.01-1 Protection of Biodiversity, Clause 12.01-2

Native Vegetation Management and Clause 12.02 -

Coastal Values and its subclauses

- Clause 13 Environmental Risks and Amenity including Clauses 13.01-2 Coastal Inundation and Erosion, 13.02

Bushfire and 13.07-1 Land Use Compatibility

- Clause 14 Natural Resource Management, including Clause 14.01-1 Protection of Agricultural land
- Clause 15 Built Environment and Heritage, including Clause 15.03 Heritage
- Clause 17 Economic Development Clause 17.04-22 Coastal and Maritime Tourism and Recreation
- Clause 18 Transport, including Clause 18.03 Ports
- Clause 19 Infrastructure, including Clause 19.01-Energy

Additional Local Planning Policy Framework key clauses that will be considered for this project include:

- Wellington Shire: The Project will need to consider the policy and objectives of the Vision for Wellington Shire set out in Clause 21.03 Vision - Strategic Framework.

Consideration will also be given to Clause 21.12 Coastal Areas Strategic Framework, Clause 21.13 - Environment and Landscape Values, Clause 21.14 - Environmental

Risk, Clause 21.15 Natural Resource Management and Clause 21.19 Infrastructure.

- Latrobe Shire: The Project will need to consider the policy and objectives of the Vision for La Trobe as well as Clause 21.03 Environmental and Landscape Values, Clause

21.04 Environmental Risks, Clause 21.05 Natural Resource Management, and Clause 21.09 Local Areas.

- South Gippsland: The Project will need to consider the policy and objectives of the Vision for South Gippsland Shire contained with Clause 21.04, as well as Clause 21.06

Environmental and Landscape Values, Clause 21.07 Environmental Risks, Clause 21.08 Natural Resource Management, and Clause 21.13 Infrastructure.

- Mornington Peninsula Shire: The Project will need to consider the policy and objectives of the Vision for Mornington Peninsula Shire contained in Clause 21.03, as well as

Clause 21.08 Foreshore and Coastal Areas, Clause 21.10 Managing Port Area Development.

A range of zones and overlays apply to the project area and generally include farming, public conservation and resource and special use, along with Environmental Significance Overlays in specific locations. The requirements of these controls would be considered in the permitting of the Project by the Minister for Planning.

The Project will consider all potential zoning and overlay requirements, including permitting, where applicable.

The above outlined Victoria Planning Provisions are not considered to be critical to the EPBC assessment and further publicly available detail can be found within the planning section of the Victorian Government Department of Environment, Land, Water and Planning website.



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1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders

The Project has been founded on a belief that involving communities and stakeholder early is critical to developing a successful project. Star of the South is committed to genuine and ongoing consultation with local communities and stakeholders.

Key objectives of consultation are to:

- Build awareness of the Project
- Provide and promote consultation opportunities so that people can get involved in project investigations and planning
- Ensure communications are clear, accessible and targeted, so that the proposed project and activities are well understood
- Build a detailed understanding of community and stakeholder views
- Use feedback to shaping project outcomes

Star of the South's approach is informed by government and industry guidance and the following consultation principles:

- Open
- Responsive
- Flexible
- Inclusive
- Act with transparency and integrity
- Accountable

While informal consultation has taken place since 2012 when the Project was first considered, the formal consultation process commenced in 2019 following Commonwealth approval of the Project's offshore Exploration Licence. Consultation to date has focused on discussing the proposed Project, site investigations and understanding stakeholder and community values and views.

This has included community consultation both online at getinvolved.starofthesouth.com.au, and in-person through meetings, presentations and at information sessions. Six information sessions held across Gippsland during August and September 2019 were attended by 350 people. A summary of the outcomes of the September engagement are included as Attachment 1 to this referral.

To date, Star of the South has started a conversation with:

- Commonwealth Department of Agriculture, Water and Environment (DAWE) (formerly Department of Energy and Environment)
- Commonwealth Department of Industry, Science, Energy and Resources (formerly Department of Energy and Environment)
- Department of Defence
- Federal Member for Gippsland
- Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)
- Office of the Victorian Minister for Planning
- Victorian Department of Environment, Land, Water and Planning
- Victorian Member for Gippsland South
- Victorian Minister for Energy, Environment and Climate Change
- Latrobe City Council officers
- South Gippsland Shire officers and administrators
- Wellington Shire officers and administrators
- West Gippsland Catchment Management Authority
- Boating Industry of Victoria
- Country Fire Authority
- Parks Victoria
- Transport for Victoria
- Transport Safety Victoria
- VicRoads
- Victorian National Parks Association
- Victorian Trades Hall Council
- Broadening Horizons Gippsland
- Committee for Gippsland
- Gippsland Climate Change Network
- Gippsland Ports Authority
- Latrobe Valley Authority
- Regional Development Victoria



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- Basslink
- CarbonNet
- Australian Energy Market Operator
- Australian Energy Regulator
- Australian Renewable Energy Agency
- National Offshore Petroleum Safety and Environmental Management Authority
- National Wind Farm Commissioner
- Australian Hydrographic Service
- Birdlife Australia
- Friends of the Earth
- Geoscience Australia
- Australian Fisheries Management Authority
- Australian Maritime Safety Authority
- Australian Recreational Fishing Association
- Commonwealth Fisheries Association
- Seafood Industry Australia
- Seafood Industry Victoria
- South East Trawl Fishing Industry Association
- South Eastern Trawl Fishing Industry Association (SETFIA)
- Victorian Fisheries Authority
- VRFish

Star of the South will continue to offer numerous and ongoing ways to provide formal and informal feedback and input into the Project, including:

- Workshops and meetings
- Specific engagement with the supply chain, including local business and industries
- Local information hub
- Community consultation events
- Community Reference Group
- Online surveys
- Feedback forms
- Social research
- Focus on 'hard to reach' and vulnerable groups

Consultation opportunities have been identified and are integrated with planning, project development and procurement milestones to ensure opportunities to discuss and input to the project design, investigations and approach to construction and operation are provided at the right time to influence decisions.

In response to current COVID-19 restrictions on public meetings, we have identified additional remote communication, consultation and feedback methods that will allow stakeholder involvement to continue through this period, including:

- Additional online engagement tools including surveys, polls and use of interactive maps
- Video presentations
- Live Q&As
- Webinars and video conferencing
- Hard copy information packs and feedback methods such as surveys
- Written submissions

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project

The onshore transmission assets, export cable and port components that are located within Victorian jurisdiction have been referred under the Environment Effects Act 1978 (EE Act) for a decision as to whether an Environment Effects Statement is required. Star of the South has engaged suitably qualified consultants to undertake a range of preliminary investigations to support and accompany both this referral and the one submitted under the EE Act:

- Attachment 1- Community consultation summary, Nov 2019
- Attachment 2- Preliminary marine ecology report
- Attachment 3- Preliminary onshore ecology assessment
- Attachment 4- Preliminary assessment of Aboriginal cultural heritage
- Attachment 5- Preliminary hydrology assessment
- Attachment 6- Preliminary seascape visual impact appraisal



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Pending the outcomes of these referrals, environmental impact assessments will be carried out as required to satisfy relevant Commonwealth and Victorian legislation to inform application documents.

1.15 Is this action part of a staged development (or a component of a larger project)?

Yes No

1.16 Is the proposed action related to other actions or proposals in the region?

Yes No



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Section 2

Matters of national environmental significance

2.1 Is the proposed action likely to have any direct or indirect impact on the values of any World Heritage properties?

Yes No

2.2 Is the proposed action likely to have any direct or indirect impact on the values of any National Heritage places?

Yes No

2.3 Is the proposed action likely to have any direct or indirect impact on the ecological character of a Ramsar wetland?

Yes No

Wetland

Three Wetlands of International Importance listed under the Ramsar Convention are in the vicinity of the Project:

- Gippsland Lakes Ramsar site
- Corner Inlet Ramsar site
- Western Port Ramsar site.

The Gippsland Lakes Ramsar site is located 10 kilometres east of the referral area, south of the Eastern Highlands and east of the Latrobe Valley. It is the largest estuarine lagoon system in Australia with an area of 61,150 ha. Its western most point is near Seaspray.

The Port of Hastings site and the BBMT and Port Anthony site have existing facilities within the Western Port and Corner Inlet Ramsar sites respectively. These Ramsar sites contain intertidal mudflats which support the world's most southerly populations of white mangroves, as well as extensive areas of saltmarsh and seagrass; are important feeding and nesting areas for many waterbirds and important areas in Victoria for migratory shorebirds and support a range of native fish species.

Impact

For the purpose of this assessment, only Western Port and Corner Inlet Ramsar sites are considered further as Gippsland Lakes is modelled as occurring in about 10 km distance to the Project and no anticipated impacts are likely to occur as a result of the Project. Should works within tributaries flowing into Latrobe River (and ultimately the Gippsland Lakes) occur, the impact on waterways would be minimised through compliance with existing requirements for working around waterways and implementation of a Construction Environment Management Plan (CEMP).

Direct Impacts

The majority of works at the ports will comprise landslide development to prepare land for manufacturing and storage facilities for the wind farm which will have minimal direct impacts on the wetlands. At BBMT structural improvements to a quay wall may be required however it is anticipated that these works would be undertaken from the landside area.

The works at Port of Hastings may include piling and this could result in underwater noise generation, impacts to the seabed, and localised sedimentation. The scale of the work would be limited to the immediate vicinity of existing port facilities where the environment has been historically disturbed and existing port operations occur.

Assessment of these potential impacts will be undertaken as part of impact assessment.

Indirect Impacts

Potential indirect impacts on the wetlands include noise and vibration associated with construction and decommissioning works, increased levels of sedimentation and turbidity in the water column from shore crossing activities, which are likely to be localised and expected to dissipate rapidly. The physical presence of the offshore infrastructure could result in changes to the wave and current regime and sediment transport processes.

These changes are expected to be localised within Bass Strait and unlikely to affect the Corner Inlet Ramsar site, however coastal processes modelling is proposed to inform the impact assessment.



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In addition, compliance with legislative and 'business-as-usual' industry control measures would:

- ensure that the installation of export cables and discharges from support vessels would dissipate rapidly and avoid significant impacts on the Corner Inlet and Western Port Ramsar sites
- prevent unplanned incidents, such as a substantial oil or chemical spills or bringing an invasive marine species into the referral area.

Accordingly, such indirect impacts on these two Ramsar sites are unlikely. Further detail on the assessment of potential impacts on the Corner Inlet Ramsar site are assessed in more detail in Section 6.1 of Attachment 2.

2.3.2 Do you consider this impact to be significant?

Yes No

2.4 Is the proposed action likely to have any direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes No

Species or threatened ecological community

The preliminary ecology assessments have identified the following threatened ecological community (TEC) in the coastal parts of the referral area:

- Subtropical and Temperate Coastal Saltmarsh TEC (Vulnerable)

Impact

Low resolution data obtained from the DoEE indicates that up to the high water mark of the referral area the Subtropical and Temperate Coastal Saltmarsh TEC could overlap with the referral area. However, finer scale data from the University of Tasmania indicates there is no overlap.

The Subtropical and Temperate Coastal Saltmarsh TEC spans six state jurisdictions and occurs in the upper-intertidal zone and is found along coastal areas under regular or intermittent tidal influence. It consists mainly of salt-tolerant vegetation including grasses, herbs, sedges, rushes and shrubs and is inhabited by a wide range of infaunal and epifaunal invertebrates, as well as low and high tide visitors such as prawns, fish and birds.

Considering the data inconsistency, it is possible that part of the Subtropical and Temperate Coastal Saltmarsh TEC overlaps with the offshore parts of the referral area. A substantial oil or chemical spill occurring in the referral area during offshore wind asset or offshore transmission asset construction could impact the TEC. There is also a low risk that invasive marine species are brought into the referral area as a result of support vessel activities and establish and encroach on the TEC.

However, given the legislative and industry standard control measures proposed, the low likelihood of such unplanned incidents, impacts are unlikely to be significant.

As identified in the Matters of National Environmental Significance - Significant impact guidelines 1.1, "listed ecological communities in the vulnerable category of ecological communities listed under the EPBC Act, are not matters of NES for the purposes of Part 3 of the EPBC Act". A detailed assessment of significant impact has therefore not been carried out. The extent of any potential overlap would be investigated as part of the Project impact assessment.

Based on the assessment undertaken it is therefore concluded that there is unlikely to be an impact on this TEC in the marine environment. Further information is provided in Section 6.2 of Attachment 2.

Key potential impacts associated with the installation of the Projects onshore transmission assets on the listed TEC include the removal of native vegetation during construction, physical impacts of equipment and machinery during all project phases on community and species that comprise the structure and function of the community and indirect impacts such as sediment introduction to aquatic habitats and unplanned release of hazardous and noxious substances.

The Subtropical and Temperate Coastal Saltmarsh is present on the coastal fringe and therefore has the potential to be impacted by the action. However, given the proposed use of trenchless shore crossing construction methods to install the electrical cables within the coastal margin, impacts to this community as a result of the onshore works required for the Project is considered unlikely.

Potential impacts are further discussed in Section 3 of this referral and Section 8.1.3 of Attachment 3.



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Species or threatened ecological community

The preliminary onshore ecology assessment has identified the following onshore TEC in the referral area.

- Gippsland Red-Gum Grassy Woodland and Associated Native Grassland (Endangered)

Impact

The onshore part of the referral area generally includes some areas of high-quality vegetation in reserves and parks, a diverse range of flora and fauna as well as coastal complexes. Outside these areas, moderate to high quality remnant woodland and forest communities are also present in smaller reserves, private land, linear roadside verges and streamside reserves. Agricultural land, while largely cleared, also provides low to moderate habitat and landscape connectivity value in the referral area through the presence of scattered trees in paddocks and small patches of native canopy trees.

Key potential impacts associated with the installation of the Projects onshore transmission assets on the listed TEC include the removal of native vegetation during construction, physical impacts of equipment and machinery during all project phases on community and species that comprise the structure and function of the community and indirect impacts such as unplanned release of hazardous and noxious substances.

For Gippsland Red-Gum Grassy Woodland and Associated Native Grassland the Project has the potential to reduce the extent of the ecological community or result in impacts to the structure and composition of the community. A small patch of the community has been recorded within the northern corridor and additional occurrences are considered potential within the same area. Based on the community distribution, location of good quality sites and the likely extent of project-related impacts, a significant impact to this community is not anticipated. However, in the absence of detailed field investigations the potential for impacts to the community remain possible. Once a preferred project footprint is selected, detailed surveys will be undertaken to confirm the presence of the community within the Project land.

There is potential to avoid or minimise impacts on the ecological community through design and mitigation. The actual amount of native vegetation to be cleared will be determined once the design is refined, applying the principles of avoiding and minimising vegetation loss to the extent practicable. However, based on the current understanding of the occurrence of the community within the transmission corridors under consideration, and taking a conservative assessment approached, there is the potential for the project to have an impact on this TEC.

Potential impacts are further discussed in Section 3 of this referral and Section 8.1.3 of Attachment 3.

Species or threatened ecological community

The preliminary onshore ecology assessment has identified the following onshore TEC in the referral area.

- Natural Damp Grassland of the Victorian Coastal Plains (Critically Endangered)

Impact

In the Gippsland Plain subregion, the community is well-known from the area between Yarram and Giffard; here, the community has been studied at grassland sites such as Alberton Cemetery, Parkside Aerodrome, Woodside Cemetery, Darriman Bushland Reserve and roadside patches along Stringybark Lane near Jack Smith Lake.

Key potential impacts associated with the installation of the Projects onshore transmission assets on Natural Damp Grassland of the Victorian Coastal Plains include the removal of native vegetation during construction, physical impacts of equipment and machinery during all project phases on community and species that comprise the structure and function of the community and indirect impacts such as sediment introduction to aquatic habitats and unplanned release of hazardous and noxious substances.

For Natural Damp Grassland of the Victorian Coastal Plains the Project since occurrences of this community are known to occur within the referral area, the potential for impacts cannot be discounted. It has been conservatively considered that there is the potential for the Project to reduce the extent of the ecological community, increase community fragmentation, adversely affect habitat critical for the survival of an ecological community or modify, destroy abiotic factors necessary for an ecological community's survival or cause in a substantial change in the species composition of an occurrence of an ecological community.

There is potential to avoid or minimise impacts on the ecological community through design and mitigation. The actual amount of native vegetation to be cleared will be determined once the design is refined, applying the principles of avoiding and minimising vegetation loss to the extent practicable. However, based on the current understanding of the occurrence of the



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community within the transmission corridors under consideration, and taking a conservative assessment approached, there is the potential for the project to have an impact on this TEC.

Potential impacts are further discussed in Section 3 of this referral and Section 8.1.3 of Attachment 3.

Species or threatened ecological community

The preliminary onshore ecology assessment has identified the following onshore ecological community in the referral area.

- Seasonal Herbaceous Wetlands (freshwater) of the Temperate Lowland Plains (Critically Endangered)

Impact

The community is characterised as temporary freshwater wetlands that are inundated on a seasonal basis following spring and winter rainfall. The community was not identified by the PMST. However, the community was identified during an assessment of the Port of Hastings (Biosis 2015). On this basis, the community has been considered by this assessment as it was recorded at the Port of Hastings within the referral area.

Key potential impacts associated with the installation of the Projects onshore transmission assets on Seasonal Herbaceous Wetlands (freshwater) of the Temperate Lowland Plains include the removal of native vegetation during construction, physical impacts of equipment and machinery during all project phases on community and species that comprise the structure and function of the community and indirect impacts such as sediment introduction to aquatic habitats and unplanned release of hazardous and noxious substances. Seasonal Herbaceous Wetlands (freshwater) of the Temperate Lowland Plains is known to exist at the Port of Hastings, where it occurs in discrete locations only and is anticipated to be avoided by the Project. However, based on the current understanding of the occurrence of the community, and taking a conservative assessment approach, there is the potential for the project to have an impact on this TEC.

For this community, it has conservatively been assumed that the Project has the potential to reduce the extent of the ecological communities, increase community fragmentation, modify, destroy abiotic factors, necessary for an ecological community's survival or result in a substantial change in the species composition of an occurrence of an ecological community.

There is potential to avoid or minimise impacts on this ecological community through design and mitigation. The actual amount of native vegetation to be cleared will be determined once the design is refined, applying the principles of avoiding and minimising vegetation loss to the extent practicable.

Potential impacts are further discussed in Section 3 of this referral and Section 8.1.3 of Attachment 3.

Species or threatened ecological community

The preliminary onshore ecology assessment has identified potential impacts on the following listed tree and shrub species in the referral area.

- Strzelecki Gum (Vulnerable)
- Trailing Hop-bush (Vulnerable)
- Dwarf Kerrawang (Endangered).

Impact

Detailed Vegetation Quality Assessments (VQA) and flora surveys were not undertaken as part of the preliminary assessment. Rather, the assessment provided a broad overview of the vegetation communities which informed the likelihood assessment for threatened flora species and ecological communities. A full assessment of the impacts on native vegetation and a determination of the associated vegetation offset requirements will be undertaken once the design is further progressed.

The Strzelecki Gum is endemic to the Strzelecki Ranges in south and west Gippsland, but its range includes surrounding areas such as Neerin South, Foster, Wilsons Promontory and Yarram. Key habitat includes Herb-rich Foothill Forest and Gippsland Plains Grassy Woodland communities. The tree generally grows in deep, grey fertile loams in hilly, often wet, sites.

The Trailing Hop-bush can occur in low-lying wet areas of woodlands, low open forests, heathlands and grasslands on sand and clay soils. In eastern Victoria it has been recorded in association with sedge wetland, heathy woodland and damp heathland EVCs. There is a known population within the Mullungdung State Forest.

Dwarf Kerrawang habitat generally includes ephemeral wetlands and lake margins where it generally grows on peaty soils. The majority of the records within the referral area occur within Giffard (Rifle Range) Flora Reserve.

Key potential impacts associated with the Projects onshore transmission assets works in relation to listed onshore flora species include the physical removal of listed species individuals during construction, physical impacts of equipment and



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machinery during all project phases on the species or species' community and indirect impacts such as sediment introduction to aquatic habitats or changes to aquatic habitat characteristics (e.g. Dwarf Kerrawang) and unplanned release of hazardous and noxious substances.

For the Strzelecki Gum, the Project has a potential to lead to a long-term decrease in the size of an important population, or reduce the area occupied by an important population of this species, should an important population be identified as being impacted by the Project. The Project has the potential of fragmenting species populations through habitat removal and site disturbance and has the potential to adversely affect critical habitat (if identified through detailed surveys).

For the Trailing Hop-bush, the Project has the potential to fragment an existing important population through habitat removal and site disturbance, or introduction of invasive species that are harmful to, or can become established in a vulnerable species habitat.

Additional information is required to understand whether the population in Mullungdung State Forest is considered an important population of Trailing Hop-bush. Until that information is available, it is conservatively considered that the Project has a potential to lead to a long-term decrease in the size of an important population should individuals be lost. It also has the potential to reduce the area of occupancy of an important population if one is identified through detailed field surveys.

The Project has a potential to lead to a long-term decrease in the size of Dwarf Kerrawang populations, to reduce the area of occupancy of an important population or fragment the species populations through habitat removal and site disturbance. It could adversely affect critical habitat for this species, has the potential to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species are likely to decline, or introduce invasive species that are harmful to a vulnerable species that become established in the vulnerable species' habitat.

In addition, the recovery of Dwarf Kerrawang could potentially be affected by the Project, as recovery actions for this species have been undertaken in Giffard (Rifle Range) Flora Reserve. Additional information is required to determine whether the Project has potential to interfere with the recovery actions at this location.

There is potential to avoid or minimise potential impacts of the Project through design and mitigation. The actual amount of native vegetation to be cleared will be determined once the design is refined, applying project wide principles of avoiding and minimising vegetation loss to the extent practicable. This includes the final width of the direct impact being likely less than 100 metres wide within the three to five kilometre wide corridor. As such, overall it is considered likely that direct impacts on the above listed species can be minimised.

Based on the current limited understanding of the occurrence of these species within the transmission corridors under consideration and based on a conservative assessment it is concluded that the Project has the potential to have an impact on these listed flora species. These potential impacts are further discussed in Section 8.1.1 of Attachment 3.

Species or threatened ecological community

The preliminary onshore ecology assessment has identified potential impacts on the following listed herbaceous and graminoid flora species in the referral area.

- Maroon Leek-orchid (Endangered)
- Green-striped Greenhood (Vulnerable)
- Spiral Sun-orchid (Vulnerable)
- Matted Flax-lily (Endangered)
- Metallic Sun-orchid (Endangered)

Impact

Detailed VQA and flora surveys were not undertaken as part of the preliminary assessment. It rather provided a broad overview of the vegetation communities which informed the likelihood assessment for threatened flora species and ecological communities. A full assessment of the impacts on native vegetation and a determination of the associated vegetation offset requirements will be undertaken once the design is further progressed.

Maroon Leek-orchid generally occurs in grasslands and grassy woodland habitats on well-drained soils, but some sites are seasonally waterlogged. No records from the referral area exist, but an unidentified Prasophyllum species was noted in the Biosis (2001) report. As the species is not recorded in the referral area and the project doesn't interact with any known populations, it is unlikely that the project would impact on an important population of the species.

Green-striped Greenhood habitat predominantly includes mixed Box-Stringybark forests with a shrubby understorey often with Austral Bracken as a dominant ground-cover species. There are records within the referral area, including a known population at Mullungdung State Forest (MSF).

Spiral Sun-orchid habitat requirements are not well understood but in general, it grows in heathy open forest and woodlands on well-drained soil. There are recent records of Spiral Sun-orchid within the referral area, comprising two within MSF.

The Matted Flax-lily generally occurs in native grasslands and grassy woodlands but can also persist in degraded



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grasslands with a high cover of exotic species. A small number of plants were recorded in Stringybark Lane, within the referral area.

The Metallic Sun-orchid generally occurs in mesic coastal heathlands habitats, grasslands and woodlands and it is also recorded inland of the coast within heathlands, open forests and woodlands. There are records for the Metallic Sun-orchid within the referral area at the Port of Hastings.

Key impacts associated with the Projects onshore transmission assets works in relation to the recorded four species include native vegetation removal during construction, physical impacts of equipment and machinery during all project phases on species and indirect impacts such as unplanned release of hazardous and noxious substances.

The Project has a potential to lead to a long-term decrease in the size of some of the listed recorded species important populations (Green-striped Greenhood, Spiral Sun-orchid). Should the small Matted Flax-lily population identified be affected by the Project, there is the potential to lead to a long-term decrease in the size of that population. Additional information is required (and will be gathered through detailed surveys) to assess whether the Project has the potential to adversely affect habitat critical to the survival of the species.

The Project has the potential of fragmenting some species populations (Green-striped Greenhood, Spiral Sun-orchid, Matted Flax-lily) through habitat removal and site disturbance.

The Project has the potential reduce the area occupied by the recorded species, adversely affect their critical habitat and has the potential to modify, destroy, remove, isolate or decrease the availability or quality of habitat and introduce invasive species that are harmful to a vulnerable species.

The Project has the potential to disrupt the breeding cycle of a Matted Flax-lily population as the flowers are buzz-pollinated by native bees (winter dormant Blue-banded Bee *Amegilla cingulata*). With only a small number of plants recorded from Stringybark Lane the loss of the pollinator has the potential to disrupt the breeding cycle of a population.

In addition, the recovery of some species could potentially be affected by the Project, as DELWP have been undertaking recovery actions for Green-striped Greenhood and Spiral Sun-orchid at MSF. However, these are not well understood. Additional information is required to determine whether the Project has potential to interfere with these recovery actions.

There is potential to avoid or minimise potential impacts of the Project through design and mitigation. The actual amount of native vegetation to be cleared will be determined once the design is refined, applying project wide principles of avoiding and minimising vegetation loss to the extent practicable. This includes the final width of the direct impact being likely less than 100 metres wide within the three to five kilometre wide corridor. As such, overall it is considered likely that direct impacts on the above listed species can be minimised.

Based on the current limited understanding of the occurrence of these species within the transmission corridors under consideration and based on a conservative assessment it is concluded that the Project has the potential to have an impact on the recorded species.

These potential impacts are further discussed in Section 8.1.1 of Attachment 3.

Species or threatened ecological community

The preliminary onshore ecology assessment has identified potential impacts on the following listed flora species in the referral area.

- River Swamp Wallaby-grass (Vulnerable)
- Swamp Everlasting (Vulnerable)

Impact

Detailed VQAs and flora surveys were not undertaken as part of the preliminary assessment. Rather, the assessment provided a broad overview of the vegetation communities which informed the likelihood assessment for threatened flora species and ecological communities. A full assessment of the impacts on native vegetation and a determination of the associated vegetation offset requirements will be undertaken once the design is further progressed.

The River Swamp Wallaby-grass has been recorded within the referral area. One record exists south of the Hyland Highway in association with Sheepwash Creek and two records exist at the Port of Hastings (north of Denham Road). The species was also recorded at Port of Hastings by Biosis (2015) and within the referral area in association with Estuarine Wetland, Wetland Formation and Damp Heathy Woodland EVCs (north and south of Denham Road/Whitneys Road). Preferred habitat exists



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within the referral area in the form of natural and man-made wetlands and waterbodies.

Swamp Everlasting habitat generally includes wetlands, sedge swamps, lowland swamps and shallow freshwater marshes, often consisting of heavy black clay soils. The species also has the capacity to occupy areas of seasonally wet native grasslands and heath communities. There are two records within the referral area at the Port of Hastings.

Key potential impacts associated with the Projects onshore transmission assets works in relation to the River Swamp Wallaby Grass and Swamp Everlasting include the removal of native vegetation during construction, physical impacts of equipment and machinery during all project phases on community species or the community and indirect impacts such as unplanned release of hazardous and noxious substances. Additional impacts include sediment introduction to aquatic habitats and changes to aquatic habitat characteristics.

The Project has a potential to lead to a long-term decrease in the size of an important population of River Swamp Wallaby Grass, as the records at the Port of Hastings may be associated with an important population as the species is only seldom recorded within the Mornington Peninsula. The Project could reduce the area occupied by an important population if habitat is affected through vegetation clearance or changes to hydrology. The Project could adversely affect critical habitat or introduce invasive species that are harmful to a vulnerable species and that become established in the species' habitat.

Targeted surveys are required to confirm the current population and area of occupancy of Swamp Everlasting. Until these are done, it is conservatively considered that the Project has a potential to lead to a long-term decrease in the size of an important population, or reduce the area occupied by this species. The Project also has the potential to adversely affect critical habitat of this species (if it is identified through detailed surveys).

There is potential to avoid and minimise potential impacts of the Project through design and mitigation. The actual amount of native vegetation to be cleared will be determined once the design is refined, applying project wide principles of avoiding and minimising vegetation loss to the extent practicable. This includes the final width of the direct impact being likely less than 100 metres wide within the three to five kilometre wide corridor. As such, overall it is considered likely that direct impacts on the above listed species can be minimised.

Based on the current limited understanding of the occurrence of these species within the transmission corridors under consideration and based on a conservative assessment it is concluded that the Project has the potential to have an impact on listed flora species. These potential impacts are further discussed in Section 8.1.1 of Attachment 3.

Species or threatened ecological community

The preliminary onshore ecology assessment has identified potential occurrence of the following listed fauna species in the referral area.

- Australasian Bittern *Botaurus poiciloptilus* (Endangered)
- Swift Parrot *Lathamus discolor* (Critically Endangered)
- Grey-headed Flying-fox *Pteropus poliocephalus* (Vulnerable)
- Swamp Antechinus *Antechinus minimus maritimus* (Vulnerable)

Impact

The Australasian Bittern has no records since 1981, and no recorded breeding sites within the referral area. Its habitat within the referral area is limited and unlikely to be impacted by being avoided through measures such as trenchless shore crossing.

For the Swift Parrot, one historical record occurs within the referral area in South Gippsland, with two other records in the broader landscape, suggesting this species is an infrequent visitor to the region during migration. This contrasts with records in the box and gum country of the fertile central and northern Victorian foothills and plains, from which there are hundreds of records. In the referral area, the flowering eucalypts (a source of nectar and lerp), in which they also roost, are not the preferred species in Victoria. As such, it is unlikely that an important population occurs within the referral area, as the habitat concerned does not support abundant preferred eucalypt feed trees.

For the flying fox, a number of records of this species occur within the referral area, both in South Gippsland and at Hastings. Day roost camps have been recorded at Traralgon and Woodside (DoEE 2020). This indicates that this species is a visitor to the region during optimal seasons. The species has not been recorded breeding in the referral area. Habitat within this area includes flowering feed trees. Given the widespread distribution of this species and the lack of large camps in South Gippsland, it is unlikely that the referral area supports an important population, with individuals present likely passing through between larger, more distant camps, such as those in Melbourne and Mallacoota.



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For the Swamp Antechinus a number of records of occur within the referral area however, no records have been recorded since 1990. Notably, all records within the referral area are from offshore islands, suggesting this species is unlikely to occur.

Given the available evidence, the Project is considered to be unlikely to significantly impact any of these species. These potential impacts are further discussed in Section 8.1.2 of Attachment 3.

Species or threatened ecological community

The preliminary onshore ecology assessment has identified potential occurrence of the following listed fauna species in the referral area.

- Southern Brown Bandicoot - *Isodon obesulus obesulus* (Endangered)

Impact

A number of records occur within the referral area, including at Port of Hastings, or within five kilometres of it, however no records occur since 1977 suggesting this species is unlikely to occur.

Key potential impacts of the Projects onshore transmission assets works on the Southern Brown Bandicoot include the removal of suitable habitat, reduce the area of occupancy and physical impacts on the species through project equipment and machinery.

This species' habitat within the referral area is limited. Given the available evidence, it is unlikely that the project would lead to a long term decrease in the size of a population but species-specific surveys are being undertaken to understand potential impacts.

The Project has the potential to reduce the area occupied by the species, however this is unlikely to affect an important population. There is the potential to fragment an important population, though this is unlikely given one is unlikely to be present, but species-specific surveys are being undertaken to understand potential impacts.

Only limited information on the presence of the species is available. As such detailed surveys are required to confirm presence or absence of species and quantify the impacts to the known populations. Whilst potential impacts are considered unlikely, and likely to be reduced or avoided through design and mitigation, based on current information and a conservative approach to assessment, it has been concluded that there is the potential for the Project to have an impact on the Southern Brown Bandicoot.

These potential impacts are further discussed in Section 8.1.2 of Attachment 3.

Species or threatened ecological community

The preliminary onshore ecology assessment has identified potential occurrence of the following listed fauna species in the referral area.

- Southern Greater Glider *Petauroides volans* (Vulnerable)

Impact

Southern Greater Gliders utilise old growth hollow-bearing trees as daily roosting habitat and for nesting and breeding. This species' habitat within the referral area is of high quality in some areas. A number of records occur within the referral area, with the most recent records being from 2007 (ALA 2020). This species' range has severely contracted in recent years due to extreme weather and fire events associated with climate change (Smith and Smith 2019), and the population previously found in this region may no longer exist.

Key potential impacts of the Projects onshore transmission assets works on the Southern Great Glider include the removal of suitable habitat, thereby reducing its area of occupancy, and physical impacts on the species through project equipment and machinery

As such, the Project has the potential to lead to a long-term decrease in the size of the species important population. Until its continued presence in the referral area is confirmed, and a preferred alignment is chosen, there remains a possibility that removal of forest habitat for the transmission assets could lead to a long-term decrease in the size of an important population. The Project has the potential to reduce the area occupied by the species or fragment the species populations through habitat removal and site disturbance.

The Project also has the potential to affect habitat critical to the survival of a species if cleared areas are widened beyond about 100 metres. The Project could interfere with the recovery of the species if an important population is identified and affected by the Project.

Only limited information on the presence of the species is available. As such detailed surveys are required to confirm presence or absence of species and quantify the impacts to the known populations. Whilst potential impacts are likely to be



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reduced or avoided through design and mitigation, based on current information and a conservative approach to assessment there is the potential for the Project to have an impact on this listed fauna species.

These potential impacts are further discussed in Section 8.1.2 of Attachment 3.

Species or threatened ecological community

The preliminary onshore ecology assessment has identified potential occurrence of the following listed fauna species in the referral area.

- Spot-tailed Quoll *Dasyurus maculatus maculatus* (Endangered)

Impact

This species' habitat within the referral area is of high quality, but limited, as quolls generally have large core home ranges (approximately 128 hectares for males). Two records occur within the referral area, or within five kilometres of the referral area, however no records have been documented since 1985, suggesting this species is unlikely to occur.

Key potential impacts of the Projects onshore transmission assets works on the Spot-tailed Quoll include the removal of suitable habitat, reduce the area of occupancy and physical impacts on the species through project equipment and machinery. Indirect impacts include unplanned release of hazardous and noxious substances.

Until its continued presence in the referral area is confirmed, and a preferred alignment is chosen, there remains a possibility that removal of forest habitat for the transmission assets could lead to a long-term decrease in the size of an important population.

The Project also has a potential to reduce the area occupied by the species or fragment these species populations through habitat removal and site disturbance. As Spotted-tailed Quoll is historically known to breed in the area, the Project has the potential to disrupt the breeding cycle of a population.

Only limited information on the presence of the species is available. As such detailed surveys are required to confirm presence or absence of species and quantify the impacts to the known populations. Whilst potential impacts are likely to be reduced or avoided through design and mitigation, based on current information and a conservative approach to assessment there is the potential for the Project to have an impact on this listed fauna species. These potential impacts are further discussed in Section 8.1.2 of Attachment 3.

Species or threatened ecological community

The preliminary onshore ecology assessment has identified potential occurrence of the following listed fauna species in the referral area.

- Growling Grass Frog *Litoria raniformis* (Vulnerable)

Impact

Several records occur within the referral area, or within five kilometres of it (ALA 2020, DELWP 2020), however no records occur since 1977. This species' habitat within the referral area is limited.

Key potential impacts of the Projects onshore transmission assets works on the Growling Grass Frog include the removal of suitable habitat, reduce the area of occupancy, introduction of disease and physical impacts on the species through project equipment and machinery. Indirect impacts include unplanned release of hazardous and noxious substances.

Given the limited available evidence, there is a potential that the Project would lead to a long-term decrease in the size or viability of an important population of this species. Although unlikely, the Project also has a potential to reduce the area occupied by these same species populations through habitat removal and site disturbance.

For the Growling Grass frog there is the potential that the Project could introduce disease that may cause the species to decline, as Chytrid fungus is a key threatening process for amphibians worldwide and works related to this project could introduce this fungal disease into waterways without mitigation and management measures.

Only limited information on the presence of the species is available. As such detailed surveys are required to confirm presence or absence of species and quantify the impacts to the known populations. Whilst potential impacts are likely to be reduced or avoided through design and mitigation, based on current information and a conservative approach to assessment there is the potential for the Project to have an impact on this listed fauna species. These potential impacts are further discussed in Section 8.1.2 of Attachment 3.

Species or threatened ecological community

The preliminary onshore ecology assessment has identified potential occurrence of the following listed fauna species in the referral area.

- Dwarf Galaxias *Galaxiella pusilla* (Vulnerable)



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Impact

Several records occur within the referral area, or within the five kilometres of it (ALA 2020, DELWP 2020), including as recently as 2013. This species' habitat within the referral area is limited.

Key potential impacts of the Projects onshore transmission assets works on the Dwarf Galaxias include the removal of suitable habitat. Indirect impacts include unplanned release of hazardous and noxious substances.

Given the available evidence, it is unlikely that the project could lead to a long-term decrease in the size or viability of an important population of this species, however surveys should be undertaken to understand the current status of the species and its habitats.

Whilst potential impacts are likely to be reduced or avoided through design and mitigation, based on current information and a conservative approach to assessment there is the potential for the Project to have an impact on Dwarf Galaxias. These potential impacts are further discussed in Section 8.1.2 of Attachment 3.

Species or threatened ecological community

The preliminary ecology assessments have identified potential occurrence of the following listed fauna species in the referral area.

- White-throated Needletail *Hirundapus caudacutus* (Vulnerable)

A detailed description of this species is provided in Section 4 of Attachment 2 and 8.1.2. of Attachment 3.

Impact

A detailed assessment against the significant impact criteria for species listed as threatened under the EPBC Act that could occur within the referral area is provided in Section 6.3 of Attachment 2.

This species does not breed within Victoria but could fly over the wind farm during their migrations to and from breeding locations.

Significant impacts are generally unlikely to occur to this species as a result of Project activities. However, uncertainty exists and the potential for significant impacts is discussed below.

There is the potential for significant impacts to the species from collision risk from turbines during operation of the projects offshore wind assets, however this will require further assessment during the impact assessment phase.

It is likely that the area of occupancy for this bird species would be reduced during construction and operation of the projects offshore wind assets. Construction and installation activities, the presence of offshore infrastructure during operations (particularly the turbines) and decommissioning activities associated with the removal of infrastructure could displace species from the referred area.

Overall, it is expected that significant impacts are unlikely for the species but there is some uncertainty associated that will require further investigation in the impact assessment phase. Therefore, it is conservatively concluded that there is likely to be an impact the species in the marine environment.

Species or threatened ecological community

The preliminary marine ecology assessment identified 3 marine mammal species listed as threatened that could occur within the Project area:

- Blue Whale *Balaenoptera musculus* (Critically Endangered),
- Southern Right Whale *Eubalaena australis* (Critically Endangered),
- Humpback whale *Megaptera novaeangliae* (Vulnerable).

Detailed descriptions of these species are provided in Section 4 of Attachment 2.

Impact

A detailed assessment against the significant impact criteria for species listed as threatened under the EPBC Act that could occur within the referral area is provided in Section 6.3 of Attachment 2.

The referral area falls within the pygmy blue whale possible foraging area BIA and distribution and migration BIA and the



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southern right whale migration and resting on migration BIA and distribution BIA.

It is likely that the area of occupancy for the above listed marine mammals would be reduced for the species or an important population during construction and operation of the projects offshore wind and offshore transmission assets.

Construction and installation activities, the presence of offshore infrastructure during operations and decommissioning activities associated with the removal of infrastructure could displace species from the referred area. Unplanned oil or chemical spills, if significant, could indirectly affect these species if habitat within the referred area that they utilise for feeding or migratory behaviours is degraded or disturbed.

Overall, it is expected that significant impacts to populations are unlikely for these species but there is some uncertainty associated with the listed threatened marine mammal species that will require further investigation in the impact assessment phase. Therefore, it is conservatively concluded that there is likely to be an impact on marine mammals.

Marine mammal baseline surveys are in progress to gather additional information on the presence and abundance of species within and near the referral area. This information would be used to inform the impact assessment for these species.

Species or threatened ecological community

The preliminary ecology assessment has identified potential occurrence of the following listed fauna species in the referral area.

- Great White Shark *Carcharodon carcharias* (Vulnerable)

Detailed descriptions of these species are provided in Section 4 of Attachment 2.

Impact

A detailed assessment against the significant impact criteria for species listed as threatened under the EPBC Act that could occur within the referral area is provided in Section 6.3 of Attachment 2.

The referral area overlaps with the white shark breeding (nursery area) BIA, which may represent critical habitat under the Recovery Plan for the Great White Shark.

It is possible that installation of offshore infrastructure and unplanned activities such as spills could disturb habitat that may be critical to the Great White Shark and the presence of offshore infrastructure could impact their breeding cycles. However, their presence within, and utilisation of the referral area is uncertain and would require further assessment during the impact assessment phase. Habitat disturbance associated with the installation and presence of subsea infrastructure or unplanned activities such as spills, vessel grounding, etc. could reduce the abundance of prey species and the presence and abundance of the Great White Shark within the referral area. However, the physical presence of infrastructure would also provide artificial structures that prey species are likely to inhabit in the longer-term.

It is likely that the area of occupancy for the Great White Shark would be reduced, particularly during construction of the projects offshore wind and offshore transmission assets. Construction and installation activities, the presence of offshore infrastructure during operations and decommissioning activities associated with the removal of infrastructure could displace the species from the referred area. Unplanned oil or chemical spills, if significant, could indirectly affect the species if habitat within the referred area that they utilise for feeding, breeding or migratory behaviours is degraded or disturbed.

Overall, it is expected that significant impacts to populations are unlikely but there is some uncertainty associated with the species that will require further investigation in the impact assessment phase. Therefore, it is conservatively concluded that there is likely to be an impact on this listed species in the marine environment.

Fish baseline surveys are in progress to gather additional information on the presence and abundance of species within and near the referral area. This information would be used to inform the impact assessment for this species.

Species or threatened ecological community

The preliminary ecology assessments have identified potential occurrence of the following listed fauna species in the referral area.

- Australian Grayling *Prototroctes maraena* (Vulnerable)

Detailed descriptions of these species are provided in Section 4 of Attachment 2.



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Impact

A detailed assessment against the significant impact criteria for species listed as threatened under the EPBC Act that could occur within the referral area is provided in Section 6.3 of Attachment 2.

Several, albeit historic (none after 1981) records of this fish occur within the onshore referral area, or within five kilometres of it. Records of this species occur in the faster-flowing waterways of the referral area ultimately connected to the sea, allowing this diadromous species to migrate between freshwater and marine environments, a requirement of successful reproduction. There is potential for clearing of vegetation on some waterways in this part of the referral area to affect the habitat of this species. As such, there is the potential that the Project could reduce the area of occupancy of an important population.

Offshore, the Australian grayling is likely to occur in shallow waters of the referral area during its larval and juvenile stages. Habitat disturbance associated with the installation and presence of subsea infrastructure or unplanned activities such as spills, vessel grounding, etc. could reduce the abundance of prey species and the presence and abundance of the Australian grayling within the referral area. However, the physical presence of infrastructure would also provide artificial structures that prey species are likely to inhabit in the longer-term.

Overall the species presence within, and utilisation of the referral area is uncertain and would require further assessment during the impact assessment phase.

It is likely that the area of occupancy for the species would be reduced, particularly during construction of the projects offshore wind and offshore transmission assets.

Construction and installation activities, the presence of offshore infrastructure during operations and decommissioning activities associated with the removal of infrastructure could displace species from the referral area. Unplanned oil or chemical spills, if significant, could indirectly affect these species if habitat within the referred area that they utilise for feeding, breeding or migratory behaviours is degraded or disturbed.

Overall, it is expected that significant impacts to populations are unlikely but there is some uncertainty associated with this species that will require further investigation in the impact assessment phase. Therefore, it is conservatively concluded that there is likely to be an impact on the species in the marine environment.

Fish baseline surveys are in progress to gather additional information on the presence and abundance of species within and near the referral area. This information would be used to inform the impact assessment for these species.

Species or threatened ecological community

The preliminary marine ecology assessment identified 11 seabird species listed as threatened that could occur within the Project area:

- Southern royal albatross *Diomedea epomophora* (Vulnerable)
- Wandering albatross *Diomedea exulans* (Vulnerable)
- Sooty albatross *Phoebastria fusca* (Vulnerable)
- Buller's albatross *Thalassarche bulleri* (Vulnerable)
- Shy albatross *Thalassarche cauta* (Vulnerable)
- Black-browed albatross *Thalassarche melanophris* (Vulnerable)
- Southern giant-petrel *Macronectes giganteus* (Endangered)
- Northern giant-petrel *Macronectes halli* (Vulnerable)
- Gould's petrel *Pterodroma leucoptera leucoptera* (Endangered)
- Fairy prion *Pachyptila turtur subantarctica* (Vulnerable)
- Australian fairy tern *Sternula nereis nereis* (Vulnerable)

Detailed descriptions of these species are provided in Section 4 of Attachment 2.

Impact

A detailed assessment against the significant impact criteria for species listed as threatened under the EPBC Act that could occur within the referral area is provided in Section 6.3 of Attachment 2.

The referral area overlaps with foraging area BIAs for the Shy Albatross, Buller's Albatross, Black-Browed Albatross and the Wandering Albatross.

Significant impacts are generally unlikely to occur to these species as a result of Project activities. Where uncertainty exists, the potential for significant impacts is discussed below.



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The physical presence of the offshore infrastructure (WTGs and substation platforms), noise and vibration during construction, operation and decommissioning activities and lighting could result in barrier effects from migratory flight paths or displace them from foraging habitat within the referral area, however these are unlikely to lead to a long-term decrease in the size of a population.

There is the potential for significant impacts to birds from collision risk from turbines during operation of the projects offshore wind assets. Based on assessments from offshore wind farms in the UK and Europe it is unlikely that this would lead to a significant impact on a population, however this will require further assessment during the impact assessment phase.

It is possible that installation of offshore infrastructure and unplanned activities such as spills could disturb habitat that may be critical to albatrosses and petrels, and the presence of offshore infrastructure could impact their breeding cycles. However, their presence within, and utilisation of the referral area is uncertain and would require further assessment during the impact assessment phase.

It is likely that the area of occupancy for these listed threatened bird species would be reduced during construction and operation of the projects offshore wind and offshore transmission assets. Construction and installation activities, the presence of offshore infrastructure during operations (particularly the turbines) and decommissioning activities associated with the removal of infrastructure could displace species from the referred area. Unplanned oil or chemical spills, if significant, could indirectly affect these species if habitat within the referred area that they utilise for feeding, breeding or migratory behaviours is degraded or disturbed.

Overall, it is expected that significant impacts to populations are unlikely for these species but there is some uncertainty that will require further investigation in the impact assessment phase. Therefore, it is conservatively concluded that there is likely to be an impact on the bird species in the marine environment.

Seabird baseline surveys are in progress to gather additional information on the presence and abundance of species within and near the referral area. This information would be used to inform the impact assessment for these species.

Species or threatened ecological community

The preliminary marine ecology assessment identified 1 shorebird species listed as threatened that could occur within the Project area:

- Hooded plover *Thinornis rubricollis rubricollis* (Vulnerable)

Detailed descriptions of this species are provided in Section 4 of Attachment 2.

Impact

A detailed assessment against the significant impact criteria for this species listed as threatened under the EPBC Act that could occur within the referral area is provided in Section 6.3 of Attachment 2.

The hooded plover breeds and forages on open, ocean sandy beaches along the entire Victorian coast, however this species rarely moves offshore and would confine its movements to the ocean coast and nearby sheltered wetlands in the region.

Eight records occur within the referral area and this species is present and almost certainly breeding on Ninety Mile Beach but given the use of construction methods that avoid surface excavation in this area, it is unlikely that the onshore components of the project would impact on an important population of this species.

It is possible that installation of offshore infrastructure and unplanned activities such as spills could disturb habitat that may be critical to the Hooded Plover and could impact their breeding cycles, feeding or migratory behaviours. However, their presence within, and utilisation of the referral area is uncertain and would require further assessment during the impact assessment phase.

Overall, it is expected that significant impacts to an important population is unlikely but there is some uncertainty associated with the species that will require further investigation in the impact assessment phase. Therefore, it is conservatively concluded that there is likely to be an impact on this species in the marine environment.

Shorebird baseline surveys are in progress to gather additional information on the presence and abundance of species within and near the referral area. This information would be used to inform the impact assessment for these species.

2.4.2 Do you consider this impact to be significant?

Yes No



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2.5 Is the proposed action likely to have any direct or indirect impact on the members of any listed migratory species or their habitat?

Yes No

Migratory species

The preliminary onshore ecology assessment has identified the potential for impact on the following migratory bird species in the referral area:

- Black-faced Monarch *Monarcha melanopsis*
- Fork-tailed Swift *Apus pacificus*
- Glossy Ibis *Plegadis falcinellus*
- Latham's Snipe *Gallinago hardwickii*
- Marsh Sandpiper *Tringa stagnatilis*
- Red-necked Stint *Calidris ruficollis*
- Sharp-tailed Sandpiper *Calidris acuminata*
- Caspian Tern *Hydroprogne caspia*
- Rufous Fantail *Rhipidura rufifrons*
- Satin Flycatcher *Myiagra cyanoleuca*.

Impact

Key potential impacts of the Projects onshore transmission assets on migratory fauna species include the substantial modification of habitat (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destruction or isolation of an area of important habitat for a migratory species, introduction of invasive species that become established in an area of important habitat and serious lifecycle disruption of an ecologically significant proportion of a migratory species population.

The Project however, is unlikely to have significant impacts on migratory bird species as no important population is known to be present within the referral area and important habitat for these species is unlikely to be significantly affected by the Project. Further details of this assessment are included in Section 8.1.2 of Attachment 3.

Migratory species

The preliminary marine ecology assessment identified the following three migratory marine mammals species and two migratory shark species as potentially occurring within the referral area:

- Blue Whale *Balaenoptera musculus*
- Southern Right Whale *Eubalaena australis*
- Humpback whale *Megaptera novaeangliae*
- Great White Shark *Carcharodon carcharias*
- Shortfin Mako Shark *Isurus oxyrinchus*

Detailed descriptions of these species are provided in Section 4 of Attachment 2.

Impact

All of the above identified migratory species are either possible or likely to occur in the referral area.

There are Biologically Important Areas (BIAs) for the Pygmy Blue Whale, Southern Right Whale, and Great White Shark. These BIAs are not limited to the referral area or the immediate vicinity of the area. They are extensive and cover large areas of the southern coast of Australia.

Important habitat for migratory species that overlaps with the referral area includes the Great White Shark breeding (nursery area) BIA (which the Recovery Plan for the Great White Shark states may be critical) (Figure 5 in Appendix A of Attachment 2).

In terms of overarching impacts to these migratory species, the physical presence of infrastructure would provide artificial structures that benthic species are likely to inhabit in the longer-term, increasing available habitat. However, changes in benthic habitats in the referral area could change the community composition of species of fish and invertebrates, which are prey for other migratory species such as the above listed shark species.

Habitat disturbance could occur as a result of construction and decommissioning activities, the presence of offshore infrastructure during operation and discharges from support vessels. The critical nature of this habitat to the listed migratory species will require further investigation during the impact assessment.



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An unplanned substantial oil spill, or the introduction and establishment of invasive marine species could impact habitat within the referral area or within the Corner Inlet Ramsar site, which could indirectly affect the Great White Shark. However, given the legislative and industry standard control measures proposed, the low likelihood of such unplanned incidents and the relatively small area of wetland that lies adjacent to the referral area, these impacts are unlikely.

Overall, it is expected that significant impacts to populations are unlikely for most species but there is some uncertainty associated with certain migratory species that will require further investigation in the impact assessment phase. Based on current information and taking a conservative approach to assessment there is the potential to have an impact on listed migratory species, to disrupt the lifecycle if an ecological significant proportion of a population, or substantially modify an area of their habitat.

Further details on the assessment of potential impacts on migratory species with likelihood to occur rating of likely or possible in the referral area is provided in Section 6.4 of Attachment 2.

Fish ecology baseline surveys are planned which will provide more information to determine the extent of the potential impact the Project could have on Great White Shark activity within the nursery area. In addition, marine mammal baseline surveys are in progress to gather additional information on the presence and abundance of species within and near the referral area. This information would be used to inform the impact assessment for these species.

Benthic ecology baseline surveys are also planned to provide additional information on the habitats that are representative of the referral area, in order to more accurately assess their potential importance to listed migratory species.

Migratory species

The preliminary marine ecology assessment identified 20 bird species listed as migratory that could occur within the referral area, including:

- Southern royal albatross *Diomedea epomophora*
- Wandering albatross *Diomedea exulans*
- Sooty albatross *Ardenna grisea*
- Buller's albatross *Thalassarche bulleri*
- Shy albatross *Thalassarche cauta*
- Black-browed albatross *Thalassarche melanophris*
- Southern giant-petrel *Macronectes giganteus*
- Northern giant-petrel *Macronectes halli*
- Gould's petrel *Pterodroma leucoptera leucoptera*
- Fairy prion *Phoebastria fusca*
- Australian fairy tern *Sternula nereis nereis*
- Little tern *Sternula albifrons*
- Flesh-footed shearwater *Puffinus carneipes*
- Short-tailed shearwater *Puffinus tenuirostris*
- Double-banded plover *Charadrius bicinctus*
- Hooded plover *Thinornis rubricollis rubricollis*
- Sanderling *Calidris alba*
- Crested tern *Thalasseus bergii*
- Fork-tailed swift *Apus pacificus*
- White-throated needletail *Hirundapus caudacutus*

Impact

Detailed descriptions of these species are provided in Section 4 of Attachment 2.

There are Biologically Important Areas (BIAs) for Short-tailed Shearwater; as well as Shy, Black-browed, Buller's, Campbell and Wandering Albatross that overlap the referral area. These BIAs are not limited to the referral area or the immediate vicinity of the area. They are extensive and cover large areas of the southern coast of Australia.

Additionally, waters south of 25 degrees latitude are also considered critical habitat for albatross and petrel foraging. This area extends across southern Australia.

Overall, habitat disturbance could occur as a result of construction and decommissioning activities, the presence of offshore infrastructure during operation and discharges from support vessels. The critical nature of this habitat to the listed migratory species will require further investigation during the impact assessment.

An unplanned substantial oil spill, or the introduction and establishment of invasive marine species could impact habitat within the referral area or within the Corner Inlet Ramsar site, which could indirectly affect the, albatrosses and petrels, the



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Short-tailed Shearwater and Eastern Curlew. However, given the legislative and industry standard control measures proposed, the low likelihood of such unplanned incidents and the relatively small area of wetland that lies adjacent to the referral area, these impacts are unlikely.

There is the potential for significant impact to the Short-tailed Shearwater. An ecologically significant proportion of short-tailed shearwaters occurs in the region, particularly in Corner Inlet on the islands around Wilsons Promontory and to the east, over 200 km from the referral area at the Skerries, Tullaberga Island and Gabo Island (Harris & Norman, 1981). The Short-tailed Shearwater is likely to forage over the referral area. The presence of the offshore infrastructure could disrupt their migration, foraging patterns or displace them from foraging habitat within the referral area. Whilst Short-tailed Shearwater breeding would not be affected within the referral area, breeding on nearby islands could be affected by collision risk and if bird fitness is reduced through displacement from foraging areas or barrier effect from having to divert from their usual flight paths to avoid the wind farm.

One migratory land bird species (White-throated Needletail) has the potential to routinely pass through the referral area on migration passages. The presence of the offshore infrastructure could disrupt their migration, foraging patterns or displace them from foraging habitat within the referral area or could affect the species via collision risk.

Overall, it is expected that significant impacts to populations are unlikely for most species but there is some uncertainty associated with certain bird species that will require further investigation in the impact assessment phase. Based on current information and taking a conservative approach to assessment there is the potential to have an impact on listed migratory species, to disrupt the lifecycle if an ecological significant proportion of a population, or substantially modify an area of their habitat.

Further details on the assessment of potential impacts on migratory species with likelihood to occur rating of likely or possible in the referral area is provided in Section 6.4 of Attachment 2.

Benthic ecology baseline surveys are also planned to provide additional information on the habitats that are representative of the referral area, in order to more accurately assess their potential importance to listed migratory species.

Seabird and shorebird baseline surveys are in progress to gather additional information on the presence and abundance of birds within and near the referral area. This information would be used in the project environmental impact assessment to conduct a more detailed assessment of the potential impacts of the project on these species.

2.5.2 Do you consider this impact to be significant?

Yes No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

Yes No

2.6.1 Is the proposed action likely to have any direct or indirect impact on the Commonwealth marine environment?

Yes No

2.6.2 Describe the nature and extent of the likely impact on the whole of the environment

The Project is located within Victorian coastal waters and Commonwealth marine waters.

The following project-related environmental aspects occurring in Victorian coastal waters could result in direct or indirect impacts on the Commonwealth marine environment:

- Routine vessel discharges
- Underwater noise and vibration
- Lighting associated with night activities
- Water and sediment quality impacts from installation or decommissioning of subsea infrastructure
- Physical presence of marine infrastructure
- Invasive marine species
- Unplanned spills and releases.

Marine fauna and their habitat could be affected by the installation of the export cables in Victorian waters. Vessel discharges and disturbance to the seabed could affect water quality in the Commonwealth Marine Area, although impacts would be considered minimal and would not threaten species populations or areas of critical or important habitat.

Lighting from navigation buoys and installation vessels could attract marine turtles and birds, increasing the risk of mortality or changes to feeding behaviour if prey species aggregate around light on water.

The nature and extent of the impacts of construction, operations and decommissioning activities that are undertaken in Victorian waters, that could directly or indirectly impact the Commonwealth marine environment and area, are described in more detail in Section 6.5 of Attachment 2.



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As such, based on current information and based on a conservative assessment the proposed action undertaken outside of the Commonwealth marine area has the potential to have an impact on the whole of environment within the Commonwealth marine area. In addition, based on the level of assessment to date, the potential for significant impact on the commonwealth marine environment cannot be discounted.

2.6.3 Do you consider this impact to be significant?

Yes No

2.7 Is the proposed action likely to be taken on or near Commonwealth land?

Yes No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

Yes No

2.9 Is the proposed action likely to have any direct or indirect impact on a water resource from coal seam gas or large coal mining development?

Yes No

2.10 Is the proposed action a nuclear action?

Yes No

2.11 Is the proposed action to be taken by a Commonwealth agency?

Yes No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage place overseas?

Yes No

2.13 Is the proposed action likely to have any direct or indirect impact on any part of the environment in the Commonwealth marine area?

Yes No

2.13.1 Describe the nature and extent of the likely impact on the whole of the environment

Biological Environment

The following environmental aspects could result in direct or indirect impacts on the Commonwealth marine area:

- Routine vessel discharges
- Underwater noise and vibration
- Lighting associated with night activities
- Water and sediment quality impacts from installation or decommissioning of subsea infrastructure
- Benthic habitat disturbance from installation, operation or decommissioning of subsea infrastructure
- Physical presence of marine infrastructure
- Vessel strike
- Dropped objects from vessels and installation platforms
- Invasive marine species
- Unplanned spills and releases.

Marine and migratory species and habitats could potentially be affected by the construction and operation of the wind farm. Subaquatic species such as cetaceans and sharks could be affected by piling and cable installation works associated with construction and bird species via bird strike associated with the operating wind farm. Benthic habitats within the referral area



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that support these species (and their prey species) could be directly disturbed by the installation of offshore subsea infrastructure (i.e. subsea export and array cables and WTG and substation platform foundations). The physical presence of infrastructure could also provide artificial structures that could change the community composition of species in the referral area. These impacts could have a substantial adverse effect on a population of species including its lifecycle.

Baseline monitoring is underway to better understand the presence and the behaviour of these species to enable these potential impacts to be fully assessed.

Socioeconomic Environment

In addition to the biological environment, the project could have impacts on the socioeconomic environment. Other marine users could be affected by the increase in vessels in the area, particularly during construction and commercial and recreational fishing activities as well as tourism and recreational activities could be disrupted or displaced.

Underwater noise and vessels could affect commercial and recreational diving activities, or research activities. Activities undertaken by other industry operators or the Australian defence force could be affected and would require simultaneous operations planning and potential mitigations. In the unlikely event of a fuel spill, temporary exclusions for activities such as fishing may be implemented. The implementation of legislative and standard control measures for shipping and navigation, maritime communications, simultaneous operations planning and spill prevention and response planning would mitigate these potential impacts. Further control measures would be identified during the Project impact assessment and via the consultation process.

When considering the impacts due to infrastructure within the Commonwealth marine area, the potential visual impact of the wind farm on the communities living on the land need to be considered. The offshore wind farm would be located between seven and 26 kilometres from the Victorian coast and is expected to be visible from some coastal locations under certain conditions. A preliminary visual appraisal has been prepared and attached to this referral as Attachment 6.

The preliminary assessment identifies that the wind farm would be visible from representative locations at Woodside Beach and Sealers Cove (Wilson's Promontory). The significance of the potential impacts will be evaluated as part of a comprehensive seascape, landscape and visual assessment of the Project.

As such, based on current information and based on a conservative assessment the proposed action has the potential to have an impact on the whole of environment. In addition, based on the level of assessment to date, the potential for significant impact on the commonwealth marine environment cannot be discounted.

The nature and extent of the impacts of construction, operations and decommissioning activities that could directly or indirectly impact the Commonwealth marine area, are described in Section 6.5 of Attachment 2.

2.13.2 Do you consider this impact to be significant?

Yes No



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Section 3

Description of the project area

3.1 Describe the flora and fauna relevant to the project area

Marine Flora

No benthic, algae or seagrass species in the referral area is listed as threatened under the EPBC Act.

Marine Fauna

There are five fish species classified as Matters of National Environmental Significance (MNES) under the EPBC Act that may occur in referral area. These are Australian grayling, Great White Shark, Whale Shark, Shortfin Mako Shark and Porbeagle Shark.

29 species of seahorses, pipefishes and sea dragons listed as marine species under the EPBC Act that could occur within the referral area. There are also species of commercial and recreational fisheries importance that could occur, including the Blue Warehouse, Southern Bluefin tuna and School shark, which are listed as conservation dependent.

Three marine turtle species are listed as both 'threatened' and 'migratory' under the EPBC Act; loggerhead, green and leatherback turtle. These species are unlikely to occur in the referral area.

There are three marine mammal species listed under the EPBC Act that are likely to occur in the referral area. These are Humpback, Blue Whale and Southern Right Whale. The referral area overlaps with a possible BIA of the latter two of the species.

Six other listed marine mammal species (Fin-, Sei- and Pygmy Right Whale, Dusky Dolphin and Killer Whale) may occur in the area.

Marine Migratory Species

There are 25 listed threatened and/or migratory seabird species potentially occurring within the area. The referral area overlaps with foraging BIAs for five species of albatross listed under the EPBC Act. There are no seabird breeding locations within the area. Whilst not listed under the EPBC Act, the referral area also overlaps with Short-tailed Shearwater and Common Diving-petrel foraging BIAs.

There are 35 listed threatened and/or migratory shorebird species potentially occurring within the area. Of these, four are listed as critically endangered, three are listed as endangered and three are listed as vulnerable. Thirty-three are listed as migratory.

One migratory land bird species (White-throated Needletail) has the potential to routinely pass through the referral area on migration passages.

Other important marine species, likely to occur include Australian Fur Seal and New Zealand Fur Seal.

Further detail on existing marine flora and fauna and migratory species, relevant to the referral area is provided in Section 4 of Attachment 2.

Threatened Ecological Communities

A preliminary onshore flora and fauna assessment has been undertaken to broadly characterise the main vegetation communities across the referral area to inform the likelihood assessment for threatened species and ecological communities.

As detailed field investigations have not yet commenced, a desktop review has identified four TECs listed under the EPBC Act that have the potential to occur in the proximity of the referral area, including:

- Assemblage of species associated with Open-coast Salt-wedge-estuaries of western and central Victorian ecological community

- Subtropical and Temperate Coastal Saltmarsh

- Natural Damp Grasslands of the Victorian Coastal Plain

- Gippsland Red-Gum Grassy Woodland and Associated Native Grassland

In addition, one TEC was recorded by Biosis (2015) at the Port of Hastings. This community is the Seasonal Herbaceous Wetlands (freshwater) of the Temperate Lowland Plains.

A review of past reports and EPBC Act community descriptions has identified that all of the above-listed communities except the Assemblage of species associated with open-coast salt-wedge-estuaries of western and central Victorian ecological community are considered likely to occur within the referral area.

Onshore Flora

From the desktop study, a total of ten EPBC Act listed flora species have the potential to occur in the referral area. Of these, four are listed as Endangered and six are listed as Vulnerable.



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Onshore Fauna

12 non-migratory fauna species listed under the EPBC Act as threatened were considered to have likely or possible likelihood of occurrence within the referral area based on their known range, modelling. Of these, one is listed as Critically Endangered, four are listed as Endangered and seven are listed as Vulnerable. Fauna species considered to have an expected or likely likelihood of occurrence are outlined in Appendix 2 of Attachment 3, along with a summary of the outcome with respect to the potential impacts to matters of NES provided in Section 8.1.1.

Onshore Migratory Species

Eight listed Migratory Species have the potential to occur in the referral area. Migratory species considered to have an expected or likely likelihood of occurrence are further discussed in Appendix 2, along with a summary of the outcome with respect to the potential impacts to matters of NES provided in Section 8.1.2 of Attachment 3.

Further detail on existing flora and fauna and migratory species relevant to the referral area is provided in Section 7 of Attachment 3.

3.2 Describe the hydrology relevant to the project area (including water flows)

River Catchments

The three transmission corridor options are located within an area that contains around 20 designated waterways from within the Latrobe River and South Gippsland catchments. The main waterways within the area are Merriman Creek which starts near Balook and flows more than 80 kilometres to the coast at Seaspray and Bruthen Creek which originates near Carrajong Lower and reaches its estuary around 30 kilometres away near McLoughlins Beach. The Bruthen Creek sub-catchment is linked to the Corner Inlet Ramsar site. The remainder of the named waterways are tributaries of the Latrobe River, Merriman Creek or Bruthen Creek or smaller streams.

For the western transmission corridor option, the transmission alignment may intersect Traralgon Creek, Flynns Creek, Merriman Creek and Bruthen Creek. For the eastern and northern corridor options, the transmission alignments may intersect Waterhole Creek, Traralgon Creek, Flynns Creek and Merriman Creek.

Waterbodies of interest to the corridors include coastal estuarine wetlands such as Jack Smith Lake, wetland swamps, ephemeral wetlands associated within the lowland plains and wetlands at the headwaters of named waterways. There are also man-made waterbodies associated with Loy Yang Power Station. Wetlands associated with the port's areas occur as low-lying permanent and ephemeral palustrine wetlands.

Further details are provided in Attachment 5.

Ramsar Rites

There are three declared Ramsar wetlands within vicinity of the referral area, Gippsland Lakes, Corner Inlet and Western Port. For the purpose of this assessment, only Western Port and Cornet Inlet Ramsar sites are considered further as Gippsland Lakes is modelled as occurring in about 10 km distance to the Project and no anticipated impacts are likely to occur as a result of the Project.

Inlet Corner site with 2,300 km² catchment size receiving 13 per cent of total flow within West Gippsland catchment. The Bruthen Creek, Tarra River, Albert River, Nine Mile Creek, Shady Creek, Agnes River, Franklin River, Bennison Creek, Stockyard Creek and Chinaman Creek are key waterways flowing into Corner Inlet. The referral area contributes to less than 5 per cent of the catchment flowing to Inlet Corner site.

Bass River, Lang Lang River, Yallock Creek, Bunyip River, Deep Creek and Merricks Creek are major waterways flow to Western Port Ramsar site. Oliver Creek with a small catchment interfaces with the corridor of the area at Port Hastings covering less than 1 per cent of the contributing area flowing into Western Port site.

Marine Hydrology

The marine part of the referral area is exposed to swell from the southwest through southeast and locally generated wind waves from all directions. Mean significant wave heights are in the order of 2-3 m, with much larger waves at times of local or remote storms (generating long-range swells). Wave disturbance to the seabed in the offshore deeper parts of the referral area would occur only during extreme wave conditions, while frequent wave disturbance would occur in the inshore, shallower parts of the seabed in the referral area.



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Regional currents are eastward in winter (driven by prevailing westerly winds) and westward in summer (prevailing southeasterly winds). Local metocean conditions are likely to be influenced by winter storms. Ebb and flood tides produce longshore currents of 0.1-0.2 m/s in the referral area.

The depth range across the Commonwealth referral area is 0-55 m deep. The shallowness of the water means that these waters more rapidly warm in summer and cool in winter than other waters of the South-East Marine Region. Seasonal and transient upwellings are important ecological features of the South-East Marine Region.

Nutrient concentrations in Bass Strait are low overall but rise in winter due to inputs from deeper waters, particularly from upwelling along the eastern Bass Strait shelf break. The proximity of the referral area to the continental shelf break (70 nautical miles / 130 km south east) means it has higher nutrient availability than other parts of Bass Strait and is therefore more productive (particularly from a fisheries perspective).

Corner Inlet is a tide dominated estuary, with an average daily tidal range of about 2.0 m. The reasonably large tidal range in the Bass Strait and the extensive shallow areas in Corner Inlet mean that more than 60 per cent of the inlet volume is exchanged over an average tidal cycle.

3.3 Describe the soil and vegetation characteristics relevant to the project area

Surface geology can be broadly characterised across the referral area as either:

- Coastal marine plains and coastal dunes comprised of recent marine sediments.
- Level plains and narrow alluvial plains comprised of Pleistocene (early) alluvial sediments and recent sediments.
- Dune fields; generally comprised of a primary, secondary and an infrequently tertiary dune system which contain shallow, back barrier tidal systems. The dune system comprises Pleistocene to Recent aeolian sediments.
- Floodplains and river terraces comprising quaternary fluvial and alluvial sediments.
- Low rising hills, slopes and plains of Tertiary sediments.

Soils across the region are classified as either:

- Texture contrast soils (Chromosols, Sodosols) and gradational texture soils (Dermosols) which support the large expanse of the Lowland Forest EVC
- Sandy soils (Podosols and Tenosols) represented across the dune systems which support Heathy Woodland and Damp Sands Herb-rich Woodland EVC
- Pale yellow and grey texture contrast soils (Hydrosols) represented across the fertile floodplains which support Swamp Scrub, Plains Grassy Woodland, Plains Grassy Forest, Plains Grassland and Gilgai Wetland EVCs.

Detailed vegetation quality assessments have not been undertaken to date. Based on the initial desktop study and the preliminary site assessment the following EVCs may be present within the referral area (bioregional conservation status displayed in parentheses).

Note that the below are Victoria specific vegetation classifications. EPBC listed communities are described in Section 3.1 above.

- EVC 1 Coastal Dune Scrub/Coastal Dune Grassland Mosaic (Depleted)
- EVC 2 Coast Banksia Woodland (Vulnerable)
- EVC 7 Clay Heathland (Depleted)
- EVC 3 Damp Sands Herb-rich Woodland (Vulnerable)
- EVC 9 Coastal Saltmarsh (Least Concern)
- EVC 10 Estuarine Wetland (Least Concern)
- EVC 16 Lowland Forest (Vulnerable)
- EVC 18 Riparian Forest (Vulnerable)
- EVC 21 Floodplain Riparian Woodland (Endangered)
- EVC 29 Damp Forest (Endangered)
- EVC 48 Heathy Woodland (Least Concern)
- EVC 53 Swamp Scrub (Endangered)
- EVC 55 Plains Grassy Woodland (Endangered)
- EVC 83 Swampy Riparian Woodland (Endangered)
- EVC 132 Plains Grassland (Endangered)
- EVC 136 Sedge Wetland (Vulnerable)
- EVC 140 Mangrove Shrubland (Least Concern)
- EVC 151 Plains Grassy Forest (Vulnerable)
- EVC 164 Creekline Herb-rich Woodland (Endangered)
- EVC 175 Grassy Woodland (Endangered)



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- EVC 191 Riparian Scrub (Vulnerable)
- EVC 687 Swamp Scrub/Plains Grassland Mosaic (Endangered)
- EVC 698 Lowland Forest/Heathy Woodland Mosaic (Vulnerable)
- EVC 703 Damp Heathy Woodland (Vulnerable)
- EVC 902 Gully Woodland (Endangered)

There is limited information available on marine geology and soil characteristics.

Available information on benthic habitats and marine flora is considered and described in Section 4 of Attachment 2.

However, detailed geophysical and geotechnical surveys, as well as benthic ecology surveys are anticipated to be conducted by Star of the South to collect information on marine soil profiles, seabed topography, sediment distribution and benthic habitat types in the referral area.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area

The onshore part of referral area is located in South Gippsland in the Gippsland Plain Bioregion. Areas of high ecological value are represented across 17 conservation reserves and 20 designated waterways that intersect the referral area. These high-value areas are connected in most part by continuous remnant vegetation within roadside and riparian corridors.

Remnant vegetation within Mullungdung State Forest, adjoining conservation reserves such as Strandbroke Flora and Fauna Reserve and Giffard (Rifle Range) Flora Reserve and native vegetation retained on private land represent the largest area of remnant vegetation within the Gippsland Plain Bioregion.

Coastal complexes at Reeves Beach and Jack Smith Lake encompass a number of vegetation communities of moderate to high quality, some of which are consistent with the EPBC Act listed threatened community Subtropical and Temperate Coastal Saltmarsh.

There are no key ecological features located within the referral area. The closest key ecological feature is the East of Eden Upwelling, located approximately 87 km from the referral area.

The BIAs that overlap with the area are:

- Great White Shark: breeding (nursery area) BIA and distribution BIA. The foraging BIA for this species does not overlap the referral area.
- Pygmy Blue Whale: possible foraging area BIA and distribution and migration BIA. These very large BIAs extend from the Perth Canyon in Western Australia, along the southern coast of Australia to offshore of Eden and Merimbula in New South Wales.
- Southern Right Whale: resting and migration BIA and distribution BIA.
- Birds: foraging BIAs for the Short-tailed Shearwater, six species of albatross and the Common Diving-petrel. The little penguin foraging BIA is located on Curtis Island outside the referral area. The nearest breeding location of seabirds is on Rag Island (12.5 km to the south-west), in the Seal Island group of islands where the Little Penguin, Fairy Prion, Short-tailed Shearwater, Common Diving-petrel, Silver Gull and Pacific Gull breed.

The referral area does not overlap with any Australian Marine Parks. Australian Marine Parks (previously Commonwealth Marine Reserves) are a network of protected areas located within Commonwealth waters and are managed by the Australian Government. Australian Marine Parks within the Southeast Marine Region are managed under the Southeast Commonwealth Marine Reserve Network Management Plan 201323.

The referral area does not overlap any Australian Marine Parks.

The closest is Beagle Marine Park which is 20 km south from the closest point of the referral area. Beagle Marine Park protects rocky reefs and diverse, colourful sponge gardens, and is an important foraging area for seabirds that breed on the islands. The marine park covers 2928 square kilometres. Other marines parks are located several hundred kilometres away from the referral area and as such not considered for this referral.

3.5 Describe the status of native vegetation relevant to the project area

EPBC relevant vegetation, likely to occur in the referral area includes four TECs, and ten listed flora species. The status of these is described below.

Coastal complexes at Reeves Beach and Jack Smith Lake encompass a number of vegetation communities of moderate to high quality, some of which are consistent with the EPBC Act listed threatened community Subtropical and Temperate Coastal Saltmarsh (Vulnerable).



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BBMT, Port Anthony and the Port of Hastings contain communities typical of the coastal complex along their associated shorelines. The areas surrounding both ports have been subject to a significant level of disturbance, although some remnant native vegetation remains. BBMT and Port Anthony is surrounded by a mix of agricultural land uses and some scattered remnants of native vegetation reflective of the EVCs present in the coastal lowlands and swampy flats of the referral area. BBMT and Port Anthony are within Corner Inlet Ramsar Wetland.

The Port of Hastings is surrounded by industrial, urban, and some agricultural land uses, with potential patches of remnant native vegetation reflective of the typical EVCs present in the coastal lowlands and swampy flats. The Port of Hastings is also located within the Western Port Ramsar Wetland.

The following four TECs listed under the EPBC Act have the potential to occur within proximity to the onshore transmission part of the referral area:

- Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community (Endangered)
- Subtropical and Temperate Coastal Saltmarsh (Vulnerable)
- Natural Damp Grasslands of the Victorian Coastal Plain (Critically Endangered)
- Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and Associated Native Grassland (Critically Endangered).

The desktop assessment identified a total of ten EPBC Act-listed threatened flora species that have potential to occur within the referred area. Of these, four are listed as Endangered, and six are listed as Vulnerable.

Given the size of the referred area and diversity of vegetation communities, there is potential that suitable habitat for these species and TECs may occur within the referral area, particularly in less disturbed areas. Detailed assessment and/or targeted survey are required to determine the presence/absence of the listed flora species and/or potentially suitable habitat for these species, as well as community presence and quality.

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

The offshore referral area is located on the continental shelf east of the Bass Strait within Australia's South-East Marine Region and is characterised by shallow water and tidal currents. The shallowness of the water means that these waters more rapidly warm in summer and cool in winter than other waters of the South-east Marine Region. Important ecological features of the region are seasonal and transient upwellings, which occur more frequently in its eastern parts, along the eastern Bass Strait shelf break which is located about 130 km south east from the referral area.

Observations of the Bass Strait inshore areas indicate that the seabed typically consists of symmetrical wave generated sandy ripples, becoming shelly in the trough areas as the depth increases. Towards the 35 to 40 m depth contour, a change to a more irregular seabed occurs. In the mid-shelf region, finer, muddy sands occur. The higher mud component is due to the seaward transport of finer grained sediment from the high energy inner to middle shelf. Unconsolidated sediments of quartzose sand cover the mostly flat seabed of the inner Gippsland Shelf.

Sedimentation in general is low due to the small supply from rivers and the relatively low productivity of carbonate. Sedimentation rates are estimated at 50 to 160 mm per 100 years. In the Gippsland Basin, seabed material is predominantly calcium carbonate comprised of calcarenite marls and marine shales. Seaward, the sediments are composed primarily of sand (92 per cent) and silt/clay (8 per cent).

Available bathymetry for the area is relatively coarse. The nearshore seabed sediments to the northeast of the entrance to Port Welshpool are known to be highly mobile and shift back and forth alongshore with tidal currents and waves. It is likely that some of the seabed contour features in the nearshore are sand waves. Depths appear to range from 15.5 m at some shallow positions along the nearshore boundary to approximately 50 m depth along the offshore boundary.

The onshore referral area extends across City of Latrobe and Wellington Shire in Victoria's Gippsland region. The topography of Wellington Shire is generally undulating with landscape features varying throughout the coastal edge and hinterland. Dunes, wide sandy beaches and intertidal sand and mud flats dominate the south-western parts of the coast, while the extensive and continuous ocean coast of Ninety Mile Beach is the dominate landscape feature of the south-eastern parts. Dunes along the coastal edge of Ninety Mile Beach are usually no higher than 10 m and topography across the area rarely exceeds 20 m. The referral area in City of Latrobe and Wellington Shire hinterlands generally vary from undulating plains above flood level to low hill regions below 300 m in elevation.

3.7 Describe the current condition of the environment relevant to the project area

Land uses within the referral area generally falls within three major categories



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- Primary industry (agriculture)
- Commercial forestry
- Areas set aside for the reservation of biodiversity conservation (state forests and conservation reserves).

While presence of weeds is assumed to be likely across the entire referral area, it would be expected that concentration of weeds would be significantly less in areas of extensive native vegetation such as the state forests and conservation reserves. The relatively highest concentration of weed infestation is likely to occur in cleared agricultural paddocks where Catchment and Land Protection Act 1994 (Cth) listed noxious weeds, and common pasture grasses and forbs are often present. Depending on the corridor option, land zoned for farming use makes up between about 60 per cent and just above 80 per cent of the referral area onshore.

Feral animals are anticipated to occur across the whole referral area but in a similar manner than weeds, be present particularly around agricultural areas.

Vegetation quality varies greatly across the referral area, with the highest quality vegetation generally found in the state forests and conservation reserves. Moderate to high quality vegetation is also present in smaller reserves, private land, linear roadside verges and streamside reserves. These smaller areas also support moderate to high quality vegetation and generally contain at least two vegetation strata and Large Trees. In these areas of higher quality vegetation, there is potential for suitable habitat for threatened flora and fauna species, and ecological communities. Agricultural land, while largely cleared, also provides low to moderate habitat and landscape connectivity value in the referral area through the presence of scattered trees in paddocks and small patches of native canopy trees.

Areas of significant erosion, including along coastlines, were not generally observed during the initial assessment of the referral area.

As described in Section 3.5, BBMT, Port Anthony and the Port of Hastings, and the surrounding areas, have a high degree of disturbance from industrial, agricultural, and urban land uses. It is expected that both Ports have a high degree of weed and feral animal infestations.

Generally, the highest quality vegetation occurs within the coastal complex communities associated with each Port. Ramsar sites also extend partway inland and cover this coastal complex. Vegetation associated with these areas immediately close to the coast and within the Ramsar sites may provide habitat for threatened flora and fauna species and ecological communities. However, as described above, the operational parts of the Ports are highly disturbed as a result of previous land use and these areas are unlikely to provide suitable habitat for these values.

Areas of significant erosion were not generally observed during the initial assessment of the referral area.

The physical and biological marine environment of the referral area is thought to be largely pristine. Benthic ecology surveys are planned, which would further characterise the current condition of benthic habitats in the referral area. There are no marine invasive species known from the referral area, however it is possible that species could be identified during benthic ecology and fish ecology surveys that are planned.

3.8 Describe any Commonwealth Heritage places or other places recognised as having heritage values relevant to the project

Four known historic shipwreck sites are within approximately six to nine kilometres of the referral area.

A preliminary investigation of publicly available materials indicates that at least two of these are likely to be in Victorian waters but protected under the Commonwealth Underwater Cultural Heritage Act 2018. These are the 1878 SS Blackbird, and the 1841 wreck of the PS Clonmel which are located approximately eight to nine km to the north-west of the southern boundary of the referral area.

Nearby and south-west of the Blackbird and Clonmel is the 1859 wreck of PS Thistle which appears to be in Commonwealth waters (but not within the referral area).

To the northeast of the referral area is the 1900 wreck of the SS Glenelg. This shipwreck is located at approximately -38.550° latitude, 147.210° longitude.

The referral area includes an area that has previously been a major corridor for coastal and international shipping. Early nineteenth century shipwrecks have been located and identified with the vicinity of the referral area and consequently there is potential for the presence of shipwrecks that could become Commonwealth Heritage Places. Geophysical and geotechnical surveys, as well as benthic habitat baseline surveys will be conducted by Star of the South during which additional places of cultural significance could be identified.



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3.9 Describe any Indigenous heritage values relevant to the project area

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

The majority of the previously registered Aboriginal places within the referral area comprise of artefact scatters, with higher density artefact scatters generally found in proximity to water courses, and a number of shell middens located in proximity to the coastline. Other Aboriginal place types present include one Aboriginal ancestral remains (burial), low-density artefact distributions (LDADs), object collections, scarred trees, one artefact scatter/object collection and an artefact scatter/earth feature/shell midden.

Northern Corridor investigation area

- Most of the artefact scatters and LDADs present within this area have been recorded on the High level terraces and fans (Geomorphological unit 7.3.1) and this unit is predominately associated with the area inland from the coastline, as well as areas along and adjacent to Merriman Creek, and in the Loy Yang region. The registered shell middens and Aboriginal ancestral remains are located on geomorphological unit 8.4, the Coastal barriers
- Most of the Aboriginal places have been recorded on the Haunted Hills Formation geological unit. This geological unit is predominately situated in the inland area around Loy Yang, Merriman Creek, and Won Wron. There are also a number of Aboriginal places recorded on the Alluvial Terrace deposits geological unit. This unit is predominately situated just inland from the coastline
- Most of the Aboriginal places have been recorded in association with the Riparian Scrubs or Swampy Scrubs and Woodlands EVC
- Most of the areas of sensitivity within the Northern corridor investigation area relate to Dunes.

Eastern Corridor investigation area

- Most of the registered places are artefact scatters/shell middens recorded on the Coastal barriers. A number of Aboriginal places have also been recorded on the High level terraces and fans
- Most of the registered Aboriginal places are associated with coastal geological units
- The 1750 EVCs that are predominately associated with registered Aboriginal places are the Coastal Scrubs Grasslands and Woodlands, Riparian Scrubs or Swampy Scrubs and Woodlands, and the Herb-rich Woodlands EVC
- Most of the areas of sensitivity within the Eastern corridor investigation area relate to Dunes.

Western Corridor investigation area

- Most of the registered Aboriginal places (predominately artefact scatter/shell middens) have been recorded on the Coastal barriers
- Most of the registered Aboriginal places are being associated with coastal geological units
- The 1750 EVCs associated with registered Aboriginal places include Coastal Scrubs Grasslands and Woodlands located adjacent to the coastline, the Riparian Scrubs or Swampy Scrubs and Woodlands areas and the Herb-rich Woodlands EVC
- Most of the areas of sensitivity within the Western corridor relate to waterways.

Ports Investigation areas

- For the Port of Hastings area, all of the registered Aboriginal places within this area were recorded on the Hills and low hills (Geomorphological unit 3.3.2)
- Registered Aboriginal places within the Port of Hasting were associated with Coastal dune deposits and Red Bluff Sandstone
- Registered Aboriginal places within the Port of Hastings area were associated with Lower Slopes or Hills Woodlands, Salt-tolerant and/or succulent Shrublands, followed by Herb-rich Woodlands, Riparian Scrubs or Swampy Scrubs and Woodlands 1750s EVCs.
- Most of the areas of sensitivity within the Port of Hastings, BBMT and Port Anthony areas relate to Ramsar wetlands.

Overall, most areas of cultural heritage sensitivity are defined by regulations ('Reg.') under the Aboriginal Heritage Regulations 2018 (Vic). These include the following general areas of cultural heritage sensitivity applicable to the referral area:



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- Coastal Crown land (Reg. 30)
- Coastal land (Reg. 31)
- Dune (Reg. 40)
- Koo Wee Rup Plain (Reg. 34)
- Park (Reg. 32)
- Registered cultural heritage place (Reg. 25)
- Waterway (Reg. 26)
- Declared Ramsar wetland (Reg. 29).

Preliminary site predictive modelling indicated that the highest likelihood for identifying previously unregistered Aboriginal heritage artefact scatters would occur on Sandstone, Haunted Hills and volcanics, dune and terrace deposits, sloping ground of less than five degrees and within close proximity to water. Further, ancestral remains would most likely occur on dune deposits, coastal lagoon, swamp and lake deposits and sloping ground of less than five degrees and shell middens on coastal dune deposits, sloping ground of less than five degrees and proximity to water.

Further information can be found in Attachment 4 - Preliminary assessment of Aboriginal cultural heritage.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area

The project construction footprint is primarily proposed within freehold land (owned by private persons) with the remaining land tenure similar areas of public land and Crown land.

Most of the onshore project components are proposed on freehold land. There are a number of parcels on Crown land within the referral area including land that is coastal foreshore, State parks and reserves and public road reserves.

The Crown land parcels directly affected by the Project will be determined following further design refinement. The proposed substations would not be constructed on Crown land.

Native title interests are also held over Crown land in the vicinity of the Project.

The seabed of the referral area is Crown land. In addition, there are several offshore permit areas in the Gippsland Basin associated with telecommunication and petroleum exploration and production industries, including a commonwealth greenhouse gas assessment permit located in the vicinity of the referral area.

3.11 Describe any existing or any proposed uses relevant to the project area

The onshore part of the referral area covers a variety of land uses, including privately owned agricultural and industrial land, Crown land and other shire, state or federally owned land. The identified route alignment options have been selected to minimise impacts to sensitive land uses wherever possible.

For the private freehold land required for the onshore transmission assets, this would be purchased, leased or secured via easement through commercial agreements with individual landowners. Relevant lease and licence arrangements would be established with the State for project elements on Crown land after planning approvals are obtained.

For areas of the seabed within Victorian coastal waters, a lease or a licence would be established with the State to occupy these areas after planning approvals are obtained.

The Project would use existing port facilities in the region to support construction and operation of the offshore wind farm. The ports are being considered through the design development and technical studies, and a final decision regarding the use of these facilities will follow. Regarding the ports, land and facilities would be leased from port operators during construction and operations.

Within the referral area, a number of easements exists.

In particular, the existing easements for the Basslink Interconnector and the Saline Water Outfall Pipe could be intersected or paralleled. The Basslink Interconnector easement is largely overhead electricity transmission with earth return and fibre optic cable suspended in catenary.

The Saline Water Outfall Pipe easement also extends from the Gippsland Coast near Giffard to Hazelwood. This easement is generally around 20 metres wide and about 80 kilometres in length.

One native title registration exists in parts of the Project referral area. The determination on the case 'Mullett on behalf of the Gunaikurnai People v State of Victoria' - VCD2010/001 - Gunaikurnai People was made on 22 October 2010. The determination was made for land within the following relevant local government areas:

- Latrobe City
- South Gippsland Shire
- Wellington Shire



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There are no significant developments located within the referral area.

The offshore referral area overlaps parts of several Victorian and Commonwealth commercial fisheries, including but not limited to Victorian Rock Lobster (Eastern zone) Fishery, Victorian Inshore Trawl Fishery, Southern and Eastern Scalefish and Shark Fishery (Shark Gillnet and Shark Hook sector) and Southern Squid Jig Fishery.

Recreational fishing includes individual fishing, charter fishing vessels, organised fishing competitions and all forms of recreational taking of fish and other marine life, including line fishing, netting, trapping, spear fishing and hand collecting. The bulk of recreational fishing occurs within three nautical miles (NM) of the shoreline, notably in bays and estuaries. However, increasingly, recreational fishing is taking place in Commonwealth-managed waters, bringing the activity within the area covered by of the South-east Marine Reserves Network Management Plan 20132023.

Other existing uses include shipping, which includes international and coastal cargo trade, passenger services, and cargo and vehicular ferry services across Bass Strait. Some of these major shipping routes cross reserves in the South-east Marine Reserves Network, particularly those in Bass Strait and to the northeast and northwest of Tasmania. Low levels of shipping activity associated with offshore petroleum infrastructure occur through the referral area, with higher traffic volume shipping areas located to the south.

The referral area does not contain any scientific research stations.

There are many offshore permit areas in the Gippsland Basin associated with industries such as telecommunications and petroleum exploration and production. The Basslink Interconnector cable route traverses within the eastern part of the referral area. The Gippsland to Tasmania gas pipeline is located approximately five km to the northeast of the area. There are also two oil platforms operated by Esso Australia Resources Pty Ltd (Dolphin and Perch), further east of the Gippsland to Tasmania gas pipeline along the 12 NM territorial sea limit.

There are a number of projects known under development or proposed in the region including Golden Beach Gas Project (referred), CarbonNet (proposed), Gippsland Renewable Energy Park (proposed) the Qube upgrade at BBMT (proposed), and Marinus Link (proposed). The potential for the Project to result in cumulative effects when combined with these projects will be considered through further assessment.

There are no defence training areas within the referral area. However, several Commonwealth agencies enter marine reserves for purposes relating to defence, border protection, law enforcement and emergency response.



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Section 4

Measures to avoid or reduce impacts

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action

The design and development of the Project has been informed by an understanding of the available wind resource, the proximity of a possible electricity transmission network connection point, site access and environmental and planning constraints.

The project development will continue to occur as further site assessments are undertaken. This will be an iterative process that will respond to ongoing environmental and technical studies and will allow Star of the South to consider potential mitigations early in the design development process.

The referral area has been selected to avoid any areas of sensitive land uses. In particular, options evaluation considering technical, environmental and social factors, such as land use and tenure, locations of dwellings and other sensitive receptors, the boundaries of National Parks and Ramsar wetland sites, areas of ecological sensitivity, areas of cultural heritage sensitivity and feedback received during consultation will be undertaken to inform key design decisions. These design decisions will provide the biggest opportunity to avoid and mitigate potential impacts and may include the siting of infrastructure away from areas of known or potential habitat or dispersal areas for threatened or listed species and communities. The principles of avoiding and minimising impacts would be applied wherever possible through design development. Once the Project is better defined, impact assessment studies will then be undertaken and these will be used to identify specific measures to manage residual impacts.

Commitments on some design aspects have already been made to reduce potential impacts, including:

- Prioritising underground transmission cables where possible
- A trenchless shore crossing (subject to further technical feasibility studies)
- Investigation of trenchless crossings of sensitive waterways/habitats

The Project would be constructed and operated under an environmental management framework. A construction environmental management plan (CEMP) would be prepared and implemented for all project components and would include directions on how the Project is constructed to minimise its impacts. Similarly, an operational environmental management plan (OEMP) would be prepared and implemented for the operational phase of the Project to minimise potential impacts.

The locations of construction compounds would be defined in response to environmental, land use and topographical constraints, landholder negotiations and technical and operational requirements.

Mitigation measures for Aboriginal Cultural Heritage are not yet proposed. However, a mandatory CHMP will be developed in line with the Aboriginal Heritage Act 2006 for the components of the proposed Project that cannot avoid areas of cultural heritage sensitivity that have not been subject to significant ground disturbance, and the activity is listed as high impact pursuant to the Regulations. The CHMP will include measures to manage and mitigate potential impacts to both known and unknown sites of Aboriginal cultural heritage.

A preliminary suite of control measures that would be implemented in order to avoid or reduce the potential marine environmental impacts on MNES associated with the Project has been identified during the preparation of this referral. These measures are listed in Section 5 of the Marine Ecology Report attached to the referral.

Additional control measures would be identified as the Project progresses through the design phase and further information and knowledge is gained via proposed modelling, marine baseline survey results. Detailed control measures would be included within the environmental impact assessment.

Star of the South would further avoid or minimise impacts by:

- Adhering to legislative requirements that apply to the Project.
- Applying industry standards that apply to marine operations in Commonwealth waters

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved

The following environmental outcomes are proposed to be achieved for the Project:

- The Project is undertaken in a manner that aligns with the objectives of Recovery Plans, Conservation Management Plans, Conservation Advices, Threat Abatement Programs and Commonwealth Marine Bioregional Plans that are relevant to MNES that occur in the referral area.
- No significant impacts to Corner Inlet Ramsar site, Western Port Ramsar site, EPBC Act listed threatened species, TECs or migratory species, or the Commonwealth marine area.



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- No destruction, modification or fragmentation of habitats considered critical or important to the survival of an EPBC Act listed threatened or migratory species.
- No substantial adverse impacts to underwater heritage features within the referral area.
- No invasive marine species are introduced or established in the referral area as a result of the Project.
- No substantial changes to the marine hydrological regime, water quality and air quality within the referral area.
- No interference with the recovery of EPBC Act listed threatened or migratory species.



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Section 5

Conclusion on the likelihood of significant impacts

5.1 You indicated the below ticked items to be of significant impact and therefore you consider the action to be a controlled action

- World Heritage properties
- National Heritage places
- Wetlands of international importance (declared Ramsar wetlands)
- Listed threatened species or any threatened ecological community
- Listed migratory species
- Marine environment outside Commonwealth marine areas
- Protection of the environment from actions involving Commonwealth land
- Great Barrier Reef Marine Park
- A water resource, in relation to coal seam gas development and large coal mining development
- Protection of the environment from nuclear actions
- Protection of the environment from Commonwealth actions
- Commonwealth Heritage places overseas
- Commonwealth marine areas

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action

NA



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Section 6

Environmental record of the person proposing to take the action

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Explain in further detail

Star of the South's aim is to develop an environmentally and economically sound project and adopts a whole-of-life cycle approach to managing environment impacts. This commitment includes a framework for ensuring that all permits and approvals are complied with at all times.

Managing environmental impacts starts during the design phase of the Project. Star of the South's primary aim is to avoid adverse environmental impacts. Where impacts cannot be avoided, mitigation measures are developed to minimise the impact on relevant receptors. The recommendations and requirements in the environmental studies would be anticipated to form an integral part of the approvals and permits conditions for the Project.

Star of the South takes its environmental responsibilities extremely seriously and would work with construction and operation contractors to ensure that the roles and responsibilities for fulfilling the conditions of approval are clearly defined.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application

There are no past or present proceedings under any relevant Commonwealth, State or Territory law.

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

Yes No

6.3.1 If the person taking the action is a corporation, provide details of the corporation's environmental policy and planning framework

Copenhagen Infrastructure Partners (CIP), is the majority owning parent organisation of Star of the South and has strategically identified, developed, constructed and owns a variety of renewable energy generation infrastructure developments around the world. CIP is a pioneer of offshore wind globally with an offshore wind portfolio that spans four continents (Europe, North America, Asia, and Australia).

Star of the South conducts its operation in line with CIPs overarching principles, guidelines and systems.

Environmental, Social and Corporate Governance (ESG), including Health and Safety (HSE) and Corporate Social Responsibility (CSR), are an integral part of CIP's entire investment process and management. Through an investment strategy focused on greenfield and renewable energy projects, CIP is aiming at creating a positive ESG impact on both job creation and climate (CO₂) in accordance with the UN Guiding Principles on Business and Human Rights and the UN Principles of Responsible Investment (www.unpri.org) and the directions provided in the 2017 OECD paper "Responsible Business Conduct for Institutional Investors" (www.mneguidelines.oecd.org/RBC-for-Institutional-Investors.pdf).

These principals and policies guide CIP in its capacity as investment manager throughout the entire investment process. This includes due diligence when selecting potential investments, i.e. in relation to human rights, labour, environment, bribery and other integrity impacts, as well as a key metric for monitoring and managing the performance of existing investments.

To ensure compliance, and account for any adverse impact, CIP has implemented procedures which allow it to warrant accountability without compromising the proprietary nature of the investments. Any relevant issues will be reported to the investment committee in question, and steps will hereafter be taken as deemed necessary.

As a global player within the field on sustainable energy, it is only natural that CIP seeks to promote the UN's Sustainable Development Goals throughout its investment strategy.

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

Yes No

6.4.1 EPBC Act No and/or Name of Proposal

The person proposing to undertake the action previously referred a proposal for 'Star of the South Offshore Surveys, Victoria (EPBC 2019/8525)' to undertake marine geophysical and geotechnical surveys off the coast of Gippsland, Victoria. Decision (7 January 2020) deemed the surveys not to be a controlled action provided the action is undertaken in the manner set out in the decision.



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Section 7

Information sources

Reference source

The preliminary assessments supporting the EPBC referral each included an extensive literature review based on a large number of information sources. This section presents a selection of sources which relate to the MNES discussed in Section 2 of this referral. The full reference lists can be found within the attachments to this referral.

Reliability

The reliability of each information source was assessed based on the source type. Sources published or administered by the Victorian or Commonwealth Government or published in a peer reviewed journal were categorised as 'high'. Consultant reports and other reputable sources were categorised as 'acceptable'.

Uncertainties

It is acknowledged that all information sources have some type of uncertainty which could be related to the results, methodology, limitations or assumptions of the source. For the sources referenced as part of the preliminary assessments supporting this referral, the uncertainties are considered 'acceptable' in the context of the information provided. Where uncertainties were considered unacceptable, the source was not relied upon.

Reference source

Andrews-Goff, V., Bestley, S, Gales, NJ, Laverick, SM, Paton, D, Polanowski, AM, Schmitt, NT & Double, MC 2018, 'Humpback whale migrations to Antarctic summer foraging grounds through the southwest Pacific Ocean'. Scientific Reports, vol. 8, no. 1, p.12333. Available from: <http://www.nature.com/articles/s41598-018-30748-4>.

Reliability

High

Uncertainties

Acceptable

Reference source

Atlas of Living Australia (ALA) 2020, <https://www.ala.org.au/>, viewed 30th January 2020

Reliability

High

Uncertainties

Acceptable

Reference source

Balcazar, NE, Tripovich, JS, Klinck, H, Nieukirk, SL, Mellinger, DK, Dziak, RP & Rogers, TL 2015, 'Calls reveal population structure of blue whales across the southeast Indian Ocean and the southwest Pacific Ocean'. Journal of mammalogy, vol. 96, no. 6, pp.1184–1193.

Reliability

High

Uncertainties

Acceptable

Reference source

Biosis (2015). Port of Hastings: Flora and Fauna Assessment of Crown Land and BlueScope Steel property (SUZ1). Report for AECOM and GHD joint venture. Biosis Pty Ltd, Melbourne.

Reliability

Acceptable



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Uncertainties
Acceptable
Reference source
BMT WBM n.d., Ecological Character Description of the Corner Inlet Ramsar Site – Final Report, 2011, Canberra.
Reliability
High
Uncertainties
Acceptable
Reference source
Carroll, E, Patenaude, N, Alexander, A, Steel, D, Harcourt, R, Childerhouse, S, Smith, S, Bannister, J, Constantine, R & Baker, CS 2011, 'Population structure and individual movement of southern right whales around New Zealand and Australia', Marine Ecology Progress Series, vol. 432, pp.257–268.
Reliability
High
Uncertainties
Acceptable
Reference source
Carter O, (2010a). National Recovery Plan for the Matted Flax-lily <i>Dianella amoena</i> . Department of Sustainability and Environment, Victoria.
Reliability
High
Uncertainties
Acceptable
Reference source
Carter, O (2010b). National Recovery Plan for Trailing Hop-bush <i>Dodonaea procumbens</i> . Department of Sustainability and Environment, Melbourne.
Reliability
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Uncertainties
Acceptable
Reference source
Carter, O. (2006). National Recovery Plan for Strzelecki Gum <i>Eucalyptus strzeleckii</i> . Department of Sustainability and Environment, Melbourne.
Reliability
High
Uncertainties
Acceptable



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Reference source
Carter, O. and Walsh, N. (2010). National Recovery Plan for the Dwarf Kerrawang <i>Rulingia prostrata</i> . Department of Sustainability and Environment, Melbourne.
Reliability
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Uncertainties
Acceptable
Reference source
Carter, O. and Walsh, N. (2011) National Recovery Plan for the Swamp Everlasting <i>Xerochrysum viscosum</i> . Department of Sustainability and Environment, Melbourne.
Reliability
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Uncertainties
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Reference source
Coates, F (2003). Action Statement No. 156. Metallic Sun-orchid <i>Thelymitra epipacroides</i> . Department of Sustainability and Environment, Melbourne.
Reliability
High
Uncertainties
Acceptable
Reference source
DAWE 2020a, Biologically Important Areas of Regionally Significant Marine Species. Available from: https://www.environment.gov.au/marine/marine-species/bias . [18 February 2020].
Reliability
High
Uncertainties
Acceptable
Reference source
DAWE. (2019a). Australian Wetlands Database - Ramsar wetlands: Western Port Available from: http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=19
Reliability
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Uncertainties
Acceptable
Reference source
DAWE. (2019b). Australian Wetlands Database - Ramsar wetlands: Corner Inlet Available from: http://www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=13
Reliability



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High

Uncertainties

Acceptable

Reference source

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Reliability

High

Uncertainties

Acceptable

Reference source

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Reliability

High

Uncertainties

Acceptable

Reference source

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Reliability

High

Uncertainties

Acceptable

Reference source

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Reliability

High

Uncertainties

Acceptable

Reference source

DoE (2015a). Approved conservation Advice (including listing advice) for the Natural Damp Grassland of the Victorian Coastal Plains. Canberra Department of Environment

Reliability

High

Uncertainties

Acceptable



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Reference source
DoE (2016) Conservation advice for <i>Thelymitra epipactoides</i> metallic sun-orchid. Available from: http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=11896
Reliability
High
Uncertainties
Acceptable
Reference source
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Reliability
High
Uncertainties
Acceptable
Reference source
DoE (2018) Assemblages of species associated with open-coast salt wedge estuaries of western and central Victoria Ecological community Consultation Guide. Threatened species scientific Committee
Reliability
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Uncertainties
Acceptable
Reference source
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Reliability
High
Uncertainties
Acceptable
Reference source
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Reliability
High
Uncertainties
Acceptable
Reference source
DoE. (2015b). Map of Natural Damp Grassland of the Victorian Volcanic Plain. Canberra Department of Environment.
Reliability
High



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Uncertainties
Acceptable
Reference source
DoEE 2020, Subtropical and Temperate Coastal Saltmarsh in Community and Species Profile and Threats, Department of the Environment, Canberra. Available from: http://www.environment.gov.au/sprat . [5 March 2020].
Reliability
High
Uncertainties
Acceptable
Reference source
DSEWPaC (2010). Western Port Ramsar Wetland Ecological Character Description. Report for Department of Sustainability, Environment, Water, Population and Communities, Canberra.
Reliability
High
Uncertainties
Acceptable
Reference source
DSEWPaC (2012a). Approved conservation advice for the seasonal herbaceous wetlands (freshwater) of the temperate lowland plains. Canberra, ACT Department of Sustainability, Environment, Water, Population and Communities
Reliability
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Reference source
DSEWPaC (2012a). Approved conservation advice for the seasonal herbaceous wetlands (freshwater) of the temperate lowland plains. Canberra, ACT Department of Sustainability, Environment, Water, Population and Communities
Reliability
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Reference source
DSEWPaC (2012b). Map of seasonal herbaceous wetlands (freshwater) of the Temperate Lowland Plains. Canberra, ACT Department of Sustainability, Environment, Water, Population and Communities.
Reliability
High
Uncertainties
Acceptable



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Reference source
DSEWPaC (2013a). Conservation advice for Subtropical and Temperate Coastal Saltmarsh. Available from: http://www.environment.gov.au/biodiversity/threatened/communities/pubs/118-conservation-advice.pdf
Reliability
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Reference source
DSEWPaC (2013b). Map of subtropical and temperate Coastal Saltmarsh (indicative map).
Reliability
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Reference source
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Reliability
High
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Reference source
DSEWPaC 2011b, The National Recovery Plan for Threatened Albatrosses and Giant Petrels 2011-2016, Canberra, ACT.
Reliability
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Uncertainties
Acceptable
Reference source
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Reliability
High
Uncertainties
Acceptable
Reference source
DSEWPaC 2013a, Recovery Plan for the Great White Shark (<i>Carcharodon carcharias</i>), Canberra, ACT.
Reliability
High
Uncertainties



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Acceptable

Reference source

DSEWPaC 2013b, Conservation Advice for Subtropical and Temperate Coastal Saltmarsh, Canberra.

Reliability

High

Uncertainties

Acceptable

Reference source

Duncan, M. (2010) National Recovery Plan for the Maroon Leek Orchid *Prasophyllum frenchii*. Department of Sustainability and Environment, Melbourne

Reliability

High

Uncertainties

Acceptable

Reference source

Duncan, M. (2010). National Recovery Plan for the Spiral Sun Orchid *Thelymitra matthewsii*. Department of Sustainability and Environment, Melbourne

Reliability

High

Uncertainties

Acceptable

Reference source

Gill, PC, Morrice, MG, Page, B, Pirzl, R, Levings, AH & Coyne, M 2011, 'Blue whale habitat selection and within-season distribution in a regional upwelling system off southern Australia', Marine Ecology Progress Series, vol. 421, pp.243–263.

Reliability

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Uncertainties

Acceptable

Reference source

Holliday, I 2003, Great White Shark (*Carcharodon carcharias*) Action Statement No. 185, Melbourne.

Reliability

High

Uncertainties

Acceptable



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Reference source
James (2002). Flora and Fauna Action Statement No. 144 Dwarf Kerrawang <i>Rulingia prostrata</i> . Department of National Resources and Environment, Victoria
Reliability
High
Uncertainties
Acceptable
Reference source
Mackay, AI, Bailluel, F, Childerhouse, S, Donnelly, D, Harcourt, R, Parra, GJ & Goldsworthy, S 2015, Offshore migratory movement of southern right whales: informing critical conservation and management needs. SARDI Publication No. F2015/000526-1. SARDI Research Report Series No. 859, Australian Research and Development Institute (Aquatic Sciences), South Adelaide, Australia.
Reliability
High
Uncertainties
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Reference source
Mackay, AI, Bailluel, F, Childerhouse, S, Donnelly, D, Harcourt, R, Parra, GJ & Goldsworthy, S 2015, Offshore migratory movement of southern right whales: informing critical conservation and management needs. SARDI Publication No. F2015/000526-1. SARDI Research Report Series No. 859, Australian Research and Development Institute (Aquatic Sciences), South Adelaide, Australia.
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Miller, BS, Kelly, N, Double, MC, Childerhouse, S, Laverick, S & Gales, N 2012, 'Cruise report on SORP 2012 blue whale voyages: Development of acoustic methods'.
Reliability
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Uncertainties
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Reference source
Smith, P. and Smith, J., 2019, Decline of the greater glider (<i>Petauroides volans</i>) in the lower Blue Mountains, New South Wales, Australian Journal of Zoology 66(2) 103-114
Reliability
High
Uncertainties
Acceptable



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Reference source

Tarburton, M.K. (2014). Status of the White-throated Needletail *Hirundapus caudacutus* in Australia: Evidence for a marked decline. *Australian Field Ornithology* 31, 122-140.

Reliability

High

Uncertainties

Acceptable



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 8

Proposed alternatives

Do you have any feasible alternatives to taking the proposed action?

Yes No

8.0 Provide a description of the feasible alternative

Star of the South is committed to progressing the development of the Project subject to ongoing investigations and relevant regulatory requirements. No alternatives are being considered for this Project. Star of the South is currently focused on developing the Star of the South Offshore Wind Farm Project and associated assets. However, within the referral area there are alternatives being considered.

Within the referral area, three alternative onshore transmission corridors are being considered. The final option selected will be subject to design development and discussions with project stakeholders.

The western corridor extends from the vicinity of Reeves Beach in a north westerly direction for 13 kilometres, traversing the South Gippsland highway, before following road reserve north along Old Rosedale Road for about 24 kilometres. The corridor then follows the existing Basslink Interconnector alignment for the remaining 25 kilometres.

The eastern corridor extends from the vicinity of Reeves Beach in a generally northerly direction for about 30 kilometres through mostly freehold land and the Giffard plantation. The corridor then follows the existing Basslink Interconnector alignment for the remaining 45 kilometres.

The northern corridor extends from the vicinity of McGaurans Beach in generally north westerly direction for about six kilometres through mostly freehold land. It then follows the existing Basslink Interconnector alignment for 56 kilometres.

Similarly, a number of port options are included within the referral area. The criteria used to select the optimal port facilities will be dependent on a number of factors.

International experience has shown the port should:

- Be close to the wind farm site to ensure optimal transportation, installation and construction activities
- Have sufficient water depths under all tidal conditions suitable for various construction vessel draughts, minimum vessel traffic and or a vessel management plan that allows for project logistics
- Have sufficient quay side facilities and availability at port to ensure optimal transportation, installation and construction activities
- Have sufficient availability of land for potential manufacturing, assembly and storage of key project components
- Provide social benefits associated with local employment.

Star of the South understands Qube Energy Pty Ltd (Qube) is proposing a regional port facility at Barry Beach involving upgrade of the existing Barry Beach Marine Terminal. The planned upgrade involving replacement of the existing wharf and deepening and widening of the channels to accept larger deeper draught vessels has the capacity to support project logistics if available in time. Situated in South Gippsland, this port would maximise local employment opportunities in this region.

With respect to the wind turbine specifications, these will be determined following site investigations, supply chain and technology considerations and further environmental assessment.

Furthermore, a number of construction scenarios are currently being considered include 'all construction within one construction phase' and 'construction phased over several stages'. The duration of the construction phase varies depending on the scenario however for indicative purposes, and for the scenario that all construction will take place within one phase, the offshore construction is anticipated to take up to three years and the onshore construction up to five years.

These scenarios will be evolved based on investigations into technical feasibility and commercial viability and will continue to be refined in response to information gathered, the environmental and social impacts identified, and as a result of the consultation process.

8.1 Select the relevant alternatives related to your proposed action

- Timeframes
- Locations
- Activities



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

8.25 Do you have another alternative?

Yes

No



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 9

Person proposing the action

9.1.1 Is the person proposing the action a member of an organisation?
 Yes No

Organisation

Organisation name	STAR OF THE SOUTH WIND FARM PTY LTD
Business name	
ABN	71623105091
ACN	
Business address	Level 30, 55 Collins St, Melbourne, 3000, VIC, Australia
Postal address	
Main Phone number	+61(3) 9108 4000
Fax	
Primary email address	info@starofthesouth.com.au
Secondary email address	

9.1.2 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:
 Small business
 Not applicable


9.1.2.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations *
 Yes No

9.1.3 Contact

First name	Casper
Last name	Frost Thorhauge
Job title	Chief Executive Officer
Phone	+61(3) 9108 4000
Mobile	
Fax	
Email	cfthorhauge@starofthesouth.com.au
Primary address	Level 30, 55 Collins St, Melbourne, 3000, VIC, Australia
Address	

Declaration: Person proposing the action

I, Casper Frost Thorhauge, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity.

Signature:  Date: 1/05/2020

I, _____, the person proposing the action, consent to the designation of _____ as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature:.....Date:



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Proposed designated proponent

9.2.1 Is the proposed designated proponent a member of an organisation?

Yes No

Organisation

Organisation name	STAR OF THE SOUTH WIND FARM PTY LTD
Business name	
ABN	71623105091
ACN	
Business address	Level 30, 55 Collins St, Melbourne, 3000, VIC, Australia
Postal address	
Main Phone number	+61(3) 9108 4000
Fax	
Primary email address	info@starofthesouth.com.au
Secondary email address	

9.2.2 Contact

First name	Casper
Last name	Frost Thorhauge
Job title	Chief Executive Officer
Phone	+61(3) 9108 4000
Mobile	
Fax	
Email	cfthorhauge@starofthesouth.com.au
Primary address	Level 30, 55 Collins St, Melbourne, 3000, VIC, Australia
Address	

Declaration: Proposed Designated Proponent

I, Casper Frost Thorhauge, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature:  Date: 1/05/2020



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Referring party (person preparing the information)	
9.3.1 Is the referring party (person preparing the information) a member of an organisation?	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Organisation	
Organisation name	AECOM AUSTRALIA PTY LTD
Business name	AECOM
ABN	20093846925
ACN	
Business address	Level 8, 540 Wickham St, Fortitude Valley, 4006, QLD, Australia
Postal address	
Main Phone number	+61 7 3553 2000
Fax	
Primary email address	brisbane@aecom.com
Secondary email address	
9.3.2 Contact	
First name	David
Last name	Hyett
Job title	Industry Director- Environment
Phone	+61 419 421 246
Mobile	
Fax	
Email	David.Hyett@aecom.com
Primary address	Level 10, 727 Collins St, Docklands, 3008, VIC, Australia
Address	
Declaration: Referring party (person preparing the information)	
I, <u>David Hyett</u> , declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.	
Signature: <u>David Hyett</u>	Date: <u>1/05/2020</u>



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Appendix A	
Attachment	
Document Type	File Name
action_area_images	EPBC referral figures.pdf
public_consultation_reports	Attachment 1 - Community consultation summary.pdf
supporting_tech_reports	Attachment 2 - Preliminary marine ecology report.pdf
supporting_tech_reports	Attachment 3 - Preliminary onshore ecology assessment - Map book.pdf
supporting_tech_reports	Attachment 3 - Preliminary onshore ecology assessment.pdf
supporting_tech_reports	Attachment 4 - Preliminary assessment Aboriginal cultural heritage-A.pdf
supporting_tech_reports	Attachment 4 - Preliminary assessment Aboriginal cultural heritage-B.pdf
supporting_tech_reports	Attachment 5 - Preliminary hydrology assessment.pdf
supporting_tech_reports	Attachment 6 - Preliminary visual appraisal.pdf

Appendix B
Coordinates
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