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Volume 5

**Chapter 1**

Conclusion by jurisdiction

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# 1 Conclusion by Jurisdiction

Marinus Link (the project) is being assessed under Commonwealth, Victorian and Tasmanian government legislation. This environmental impact statement/environment effects statement (EIS/EES) addresses the assessment requirements under Commonwealth and Victorian legislation. The assessment of the project under Tasmanian legislation is presented in separate EIS documentation to address the requirements of the Tasmanian EPA for the converter station and shore crossing.

This chapter provides a conclusion for the assessment of the project in accordance with the:

- Commonwealth jurisdiction: Guidelines for the Content of a Draft Environmental Impact Statement – Environment Protection and Biodiversity Conservation Act 1999 – Marinus Link underground and subsea electricity interconnector cable (EPBC 2021/9053) issued by DCCEEW (September 2022) (EIS Guidelines) (Attachment 1).
- Victorian jurisdiction: Scoping Requirements Marinus Link Project Environment Effects Statement issued by the Minister for Planning (February 2023) (EES scoping requirements) (Attachment 2).

The EIS/EES has assessed the potential impacts of the construction, operation and decommissioning of the project, informed by 23 technical studies. Through the completion of these technical studies, environmental performance requirements (EPRs) have been developed for the project that will define the environmental outcomes to be achieved through construction, operation and decommissioning. The EPRs are a key component of the Environmental Management Framework (Volume 5, Chapter 2 – Environmental Management Framework), which sets out the proposed governance framework for the management of project impacts and compliance with statutory approvals.

## 1.1 Commonwealth

The Commonwealth Minister for the Environment and Water will consider if the project should be approved under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This section summarises the EPBC Act requirements for the EIS/EES and outlines how the project addresses the principles of ecologically sustainable development (ESD) and the objectives of the EPBC Act, as required by *Section 13 - Conclusion* of the EIS Guidelines. Attachment 1: Checklist - Guidelines for the Content of a Draft Environmental Impact Statement includes details of where the requirements of the EIS Guidelines have been addressed throughout this EIS/EES.

This conclusion also considers potential impacts to Matters of National Environmental Significance (MNES) in Tasmanian land and waters as required under the EPBC Act as well as marine impacts in Tasmanian waters to shipwrecks, as required under the *Underwater Cultural Heritage Act 2018* (Cwlth).

## 1.1.1 Principles of ecologically sustainable development

Section 3A of the EPBC Act defines principles of ESD. Table 1-1 outlines how the assessment of the project has considered long-term and short-term economic, environmental, social and equitable considerations, including principle of inter-generational equity and the conservation of biological diversity and ecological integrity. The Commonwealth Minister for the Environment and Water is required under section 136 of the EPBC Act to consider the principles of ESD when deciding whether or not to approve the project.

Table 1-1 EPBC Act principles of ecologically sustainable development

Principle*	Assessment approach	Relevant part of EIS/EES
<p>(a) Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations</p>	<p>Project planning and design has considered the potential social, economic and environmental impacts that may occur during construction, operation and decommissioning. The objective of the route and site selection was to identify the ‘shortest, technically feasible route between connection points that minimises environmental, land use and cultural heritage impacts’ (Marinus Link Pty Ltd 2021). Ecological, cultural heritage, geophysical and geotechnical studies were completed to inform the route selection. In determining the project alignment, the following aspects were evaluated:</p> <ul style="list-style-type: none"> <li>➤ Connection start and end points</li> <li>➤ Technical specification of what is proposed to be built</li> <li>➤ Physical, biological, and socioeconomic values that exist in the area of interest</li> <li>➤ Considering the constraints and identifying the opportunities from these values</li> <li>➤ Prudent and feasible project corridors, and routes within the corridors</li> <li>➤ Alternative routes against route selection criteria and constraints</li> <li>➤ Identification of a preferred route.</li> </ul> <p>The assessment investigated seven prudent and feasible corridors, with the aim of minimising constraints and risks related to:</p> <ul style="list-style-type: none"> <li>➤ Steep slopes and unstable landforms</li> <li>➤ Impacts on properties and farming</li> <li>➤ Impacts on plantation operations</li> <li>➤ Impacts on sensitive seabed features, such as reefs</li> <li>➤ Impacts on watercourses and remnant vegetation.</li> </ul> <p>Based on economic analysis of potential capacity options of 600 MW up to 1500 MW, a transmission capacity of 1500 MW was identified as delivering the highest net economic benefit (TasNetworks 2021).</p> <p>The selection of the project alignment involved considerable consultation with a range of stakeholders, including councils, state government agencies, First Peoples groups, affected landholders, the community, industry organisations and land management authorities. This consultation was undertaken to understand sensitivities and constraints along the alignment and to identify issues to address in planning and design development, and in the EIS/EES.</p> <p>An integrated assessment of the technical requirements and potential impacts, considering both short and long terms impacts, was completed to determine the preferred project alignment. It has also informed the development of the project concept design assessed in the EIS/EES.</p>	<p>Volume 1, Chapter 3 – Route selection and project alternatives</p> <p>Volume 1, Chapter 7 – Economics</p> <p>Volume 1, Chapter 8 – Community and stakeholder engagement</p>

Principle*	Assessment approach	Relevant part of EIS/EES
<p>(b) If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation</p>	<p>The project assessment has undertaken detailed environmental investigations across the land and subsea cable alignments and converter station locations. Surveys have been completed across the alignment and targeted in locations where there is limited existing knowledge or uncertainty about values that could be impacted. Supporting technical studies have adopted conservative assumptions and a precautionary approach by assuming the presence of species where information gaps or uncertainties exist. This conservative approach has been used in the assessment of impacts. For example, when considering impacts to marine mammals, a longer duration of exposure has been assumed than is likely to occur so that the assessment of impact is conservative.</p> <p>Site-specific studies have been conducted to inform the design of the project and have provided a contextual understanding of potential impacts. Experienced technical specialists were engaged to undertake these assessments and to draw on their experience in the Gippsland, Bass Strait and Heybridge areas.</p> <p>The findings of the technical studies have been used to develop EPRs for the project. EPRs set out the environmental outcomes that must be achieved during design, construction, operation and decommissioning of the project. The EPRs adopt a performance-based approach for project approval and delivery. This approach encourages innovation in development of the design and construction of the project to determine how best to achieve the EPRs to avoid or minimise impacts. The EPRs will be the key approval conditions to be complied with to avoid, minimise, and manage impacts.</p> <p>Some EPRs require collection and assessment of data to confirm that impacts are being managed. Other EPRs require further assessment to be undertaken prior to construction to verify potential impacts in areas where surveys were restricted, and to inform development of management measures. This applies, for example, where ecological surveys identified potential habitat, or historical records of unsurveyed areas indicated the presence of a species, so the assessments assumed presence of a species to provide a conservative assessment of impacts.</p> <p>The final design and construction methods adopted for project delivery must comply with the EPRs and be located within the area of the proposed Specific Controls Overlay (SCO). The final alignment and infrastructure will be documented in Alignment Plans and Development Plans that will be approved by the Minister for Planning in accordance with the proposed draft Planning Scheme Amendment with Incorporated Document. The Environmental Management Framework outlines the process for managing changes to design and construction methods following approval of the Alignment Plans and Development Plans.</p>	<p>Volume 1, Chapter 5 – EIS/EES assessment framework</p> <p>Volume 2, Chapter 2 – Terrestrial Ecology</p> <p>Volume 3, Chapter 2 – Marine ecology</p> <p>Volume 4, Chapter 11 – Terrestrial ecology</p> <p>Volume 5, Chapter 2 – Environmental Management Framework</p>

Principle*	Assessment approach	Relevant part of EIS/EES
<p>(c) The principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations</p>	<p>The project seeks to unlock renewable energy generation opportunities and cost-effective energy storage, and support affordable, reliable, and clean energy across the National Electricity Market (NEM). Implementation of the project is expected to support a reduction in greenhouse gas (GHG) emissions by 140 million tonnes of carbon dioxide equivalent by 2050.</p> <p>The project seeks to enable a greater use of renewable energy sources in Australia into the future. Improved access to low GHG emitting renewable energy and improved efficiency of the electricity grid will contribute to the Commonwealth Government’s goal of reducing net GHG emissions 43% below 2005 levels by 2030 (under the Paris Agreement and legislated under the Climate Change Act 2021 (Cwth)), Victoria’s emission reduction target of net GHG emissions to zero by 2045 and Tasmania’s emission reduction goal under the Climate Change (State Action) Act 2008 (Tas) of reducing net GHG emissions to zero by 2050. As a result, higher GHG emitting energy sources can be phased out and replaced by low GHG emitting renewable energy.</p> <p>The implementation of measures to comply with EPRs during design, construction, operation and decommissioning of the project will minimise environmental impacts in the short and long term. The EPRs also provide for ongoing use of properties along the project alignment for future generations through land use being able to return following completion of project construction.</p>	<p>Volume 1, Chapter 9 – Sustainability, climate change and greenhouse gas emissions</p> <p>Volume 5, Chapter 2 – Environmental Management Framework</p>
<p>(d) The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making</p>	<p>The potential to affect biological diversity and ecological integrity was a key consideration in the determination of the preferred route for the project. Flora and fauna surveys were completed to understand the potential impacts of the project and enable the route selection and design considerations of the project to avoid impacts on threatened fauna, flora and vegetation communities and other conservation significant biodiversity and natural values. The following avoidance and minimisation measures were adopted in route selection and design of the project included (where possible):</p> <ul style="list-style-type: none"> <li>➤ Avoiding national parks, marine parks, state parks, conservation parks, reserves and registered heritage places.</li> <li>➤ Reducing direct impacts to intact patches of remnant vegetation.</li> <li>➤ Utilising existing breaks in riparian vegetation for watercourse crossings reducing length of route in landforms and features with a high potential for containing Aboriginal cultural heritage.</li> <li>➤ Locating the route in farmland to avoid impacts on remnant vegetation in road reserves and disruption to traffic and access caused by construction in a road carriageway.</li> <li>➤ Locating the route adjacent to boundary fences to reduce impacts on land use and properties.</li> <li>➤ Locating the route in or adjacent to disturbed areas including plantation firebreaks, farm laneways, access tracks and disused road formations making perpendicular crossings of watercourses and coastal dunes.</li> <li>➤ Locating joint pits and other infrastructure to avoid ecological values where practicable.</li> <li>➤ Use of underground High voltage direct current (HVDC) technology for the onshore cable component of the project within Victoria.</li> <li>➤ Using existing roads, tracks and cleared areas for access and construction laydown, where practicable.</li> <li>➤ Sourcing quarry material, concrete, and other construction materials from existing licensed facilities, where practicable, avoiding the need to construct new facilities.</li> <li>➤ Narrowing the indicative construction area of disturbance (AoD) in some areas to avoid impacting vegetation and to provide sufficient clearance to avoid tree protection zones (TPZs).</li> <li>➤ Locating the transition station in farmland, away from culturally and ecologically sensitive coastal reserves and foreshore areas.</li> </ul>	<p>Volume 1, Chapter 3 – Route selection and project alternatives</p> <p>Volume 2, Chapter 2 – Terrestrial Ecology</p> <p>Volume 3, Chapter 2 – Marine ecology</p> <p>Volume 4, Chapter 11 – Terrestrial ecology</p> <p>Volume 5, Chapter 2 – Environmental Management Framework</p>

Principle*	Assessment approach	Relevant part of EIS/EES
	<ul style="list-style-type: none"> <li>➤ Bundling and burying cables to reduce electromagnetic fields (EMF) emissions in the marine environment.</li> <li>➤ Use of construction technique that fluidises the seabed to minimise sediment dispersion and reduce impacts to water quality.</li> <li>➤ The shore crossing in Victoria will be constructed using horizontal directional drilling (HDD), which will extend up to 1 km offshore to approximately 10 m water depth. The intention of this approach is to avoid and reduce impacts to sensitive coastal dune habitats at Waratah Bay and the Waratah Bay-Shallow Inlet Coastal Reserve.</li> <li>➤ Use of HDD for the shore crossing in Tasmania, avoiding the coastal area.</li> </ul>	
(e) Improved valuation, pricing and incentive mechanisms should be promoted	<p>The project is proposed to deliver an additional 1,500-MW capacity through two cable stages connection between Tasmania and Victoria. This generation has ability to put downward pressure on energy prices by introducing additional on-demand generation and connecting additional intermittent renewable energy sources in the NEM.</p> <p>The project will reduce the nation's dependency on conventional power stations and providing jobs both directly and indirectly acts to support a stronger, larger and more diverse economy.</p>	<p>Volume 1, Chapter 2 – Project rationale</p> <p>Volume 1, Chapter 7 – Economics</p>

\*Extracted from Section 3A, Environment Protection and Biodiversity Conservation Act 1999 (legislation.gov.au)

## 1.1.2 Objects of the EPBC Act

Section 3 of the EPBC Act outlines the objects of the act. Table 1-2 outlines how the assessment of the potential impacts of the project has provided for the protection of the environment, including MNES, biodiversity and heritage values.

Table 1-2 Objects of the EPBC Act

Object*	Assessment approach	Relevant part of EIS/EES
(a) To provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance	<p>Measures adopted to reduce impacts on the environment and MNES, include:</p> <ul style="list-style-type: none"> <li>➤ Avoiding impacts on native vegetation and critical habitats, to the extent reasonably practicable, through detailed design and appropriate construction methods, including: <ul style="list-style-type: none"> <li>○ Minor realignment of the project to avoid impacts to threatened flora and fauna and other sensitive environmental values.</li> <li>○ Reducing the width of the AoD.</li> <li>○ Utilising trenchless technologies such as HDD for key waterways and road crossings</li> </ul> </li> <li>➤ Developing and implementing biodiversity and marine fauna management plans, considering the species-specific recovery plans, threat abatement and conservation advice, including the following mitigation and minimisation measures (where possible): <ul style="list-style-type: none"> <li>○ Minimising the removal of habitat loss and degradation.</li> <li>○ Managing the risk of the introduction and spread of environmental weeds and diseases.</li> <li>○ Restricting works within proximity to critical habitats.</li> <li>○ Managing all work areas to maintain landform stability and avoid or minimise erosion and sedimentation.</li> <li>○ Utilising night lighting to a minimum amount required to safely operate the site and reduce light pollution.</li> </ul> </li> </ul>	<p>Volume 1, Chapter 5 – EIS/EES assessment framework</p> <p>Volume 2, Chapter 2 – Terrestrial Ecology</p> <p>Volume 3, Chapter 2 – Marine ecology</p> <p>Volume 4, Chapter 2 – Geomorphology and Geology</p> <p>Volume 4, Chapter 5 – Surface water</p> <p>Volume 4, Chapter 6 – Agriculture and Forestry</p> <p>Volume 4, Chapter 8 – Traffic and Transport</p>

Object*	Assessment approach	Relevant part of EIS/EES
	<ul style="list-style-type: none"> <li>○ Completing pre-clearing inspections by a suitably qualified ecologist prior to habitat removal, to confirm the on-site location of fauna, and relocate fauna, where required.</li> <li>○ Installing temporary wildlife barriers near critical habitats to prevent the movements of ground-dwelling fauna into high-risk areas.</li> <li>○ Ensuring speed limits within works areas are restricted to appropriate levels.</li> <li>➤ Implementing aquatic habitat protection measures to avoid and minimise impacts to habitat including through adopting trenchless construction for key waterways.</li> <li>➤ Implementing measures to avoid interactions with marine fauna during construction activities such as visual surveys and maintaining buffer zones for separation from marine fauna.</li> <li>➤ Implementing measures to manage the risk of introducing and spreading invasive marine species.</li> </ul>	<p>Volume 4, Chapter 11 – Terrestrial ecology</p>
<p>(b)</p> <p>To promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources</p>	<p>MLPL has sought to integrate the principles of ESD through a commitment to the identification of key community values, analysis of alternative routes and mitigation of impacts affecting physical, biological, cultural, economic and social values.</p> <p>The construction, operation and decommissioning of the project will be governed by the Marinus Link <i>Sustainability Framework</i>. The framework will inform MLPL’s sustainability targets which are mapped against the framework’s three core sustainability objectives of:</p> <ul style="list-style-type: none"> <li>➤ Healthy Planet</li> <li>➤ Community Prosperity</li> <li>➤ Trusted Organisation</li> </ul> <p>These framework and targets will be reviewed annually to ensure that they remain fit-for-purpose and appropriate as the project moves through delivery into operation.</p> <p>An outline of how the project addresses the principles of ESD is provided in Table 1-1.</p>	<p>Table 5-1 – Principles of ecologically sustainable development</p> <p>Volume 1, Chapter 5 — EIS/EES assessment framework</p> <p>Volume 1, Chapter 7 – Economics</p> <p>Volume 1, Chapter 8 – Community and stakeholder engagement</p> <p>Volume 1, Chapter 9 –Sustainability, climate change and greenhouse gas emissions</p>
<p>(c)</p> <p>To promote the conservation of biodiversity</p>	<p>MLPL will adopt avoidance and mitigation measures to comply with EPRs to minimise impacts on biodiversity in both the marine and terrestrial environment. These measures will include, where appropriate:</p> <ul style="list-style-type: none"> <li>➤ Pre-construction assessments to identify opportunities to avoid impacts to native fauna and flora, including trenchless construction methods and cable pre-lay surveys.</li> <li>➤ Implementation of marine fauna interaction plans and protocols.</li> <li>➤ Measures to limit project construction lighting and construction noise.</li> <li>➤ Completing vegetation quality assessments, arboriculture assessments and habitat assessments at locations that could be impacted by the construction and operation of the project.</li> <li>➤ Use of native species in revegetation or plantings that is suited to the landscape context.</li> <li>➤ Daily inspections of open trenches or pits for trapped fauna, and measures for safe relocation.</li> <li>➤ Avoiding works within 100 m of critical habitats during sensitive life-stages (such as breeding and nesting).</li> </ul>	<p>Volume 1, Chapter 5 – EIS/EES assessment framework</p> <p>Volume 2, Chapter 2 – Terrestrial Ecology</p> <p>Volume 3, Chapter 2 – Marine ecology</p> <p>Volume 4, Chapter 11 – Terrestrial ecology</p> <p>Volume 4, Chapter 10 – Noise and vibration</p> <p>Volume 5, Chapter 2 – Environmental Management Framework</p>

Object*	Assessment approach	Relevant part of EIS/EES
<p>(ca)</p> <p>To provide for the protection and conservation of heritage</p>	<p>One item of historic heritage value, a brick cistern, was identified within the study area. The brick cistern constructed in association with a homestead on the site that has since been dismantled and relocated to near Waratah Bay. The brick cistern is located outside the construction area, however, is within 50 m of the edge of the construction area and access road. MLPL will implement a historical heritage management plan (HHMP) which will include measures to prevent impacts to the cistern.</p> <p>A total of 28 Aboriginal cultural heritage places were identified within the study area, including five artefact scatter and ten low density artefact distributions. Pre-construction surveys will be undertaken in the marine environment to protect identified maritime and submerged aboriginal cultural heritage. A management plan for underwater cultural heritage will be developed to document measures to avoid and minimise impacts on underwater cultural heritage and archaeology.</p> <p>With the implementation of the EPRs and associated management plans, identified heritage will be protected during the construction and operation of the project.</p>	<p>Volume 1, Chapter 5 — EIS/EES assessment framework</p> <p>Volume 3, Chapter 4 – Underwater cultural heritage</p> <p>Volume 4, Chapter 13 – Aboriginal cultural heritage</p> <p>Volume 4, Chapter 14 – Non-Indigenous cultural heritage</p>
<p>(d)</p> <p>To promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples</p>	<p>MLPL engaged with a variety of stakeholders regarding the potential impacts associated with the project. Outcomes informed the project design, assessment of impacts and environmental and social management measures. Stakeholders included:</p> <ul style="list-style-type: none"> <li>➤ Local councils</li> <li>➤ Government agencies</li> <li>➤ Local community</li> <li>➤ First Peoples</li> <li>➤ Landholders</li> <li>➤ Fisheries</li> <li>➤ Community groups</li> <li>➤ Local communities</li> <li>➤ Members of Parliament</li> <li>➤ Industry organisations</li> <li>➤ Local economic authorities.</li> </ul> <p>A Technical Reference Group (TRG) was established by the Department of Transport and Planning (DTP) to provide and guidance advice to the proponent in the preparation of the EIS/EES and to comment on whether the EIS/EES documentation addressed the key legislation, policies and guidelines of TRG member agencies and organisations. The TRG comprises of relevant Commonwealth and Victorian government agencies, Registered Aboriginal Parties (RAP), as well as the EPA Tasmania.</p> <p>In Victoria, MLPL has established the First Peoples Advisory Group (FPAG) with the three relevant First Peoples groups for the project area. The FPAG will work with MLPL through the ongoing development and delivery of the project. Refer to object (f) for further description.</p> <p>In Tasmania, MLPL has met with truwana Rangers and Community leaders, and is committed to further ongoing meaningful engagement in Tasmania.</p> <p>The TRG met 15 times and provided comments on the technical studies and EIS/EES chapters.</p> <p>The Gippsland Stakeholder Liaison Group (GSLG) was formed in late 2021 to facilitate engagement between key stakeholders and MLPL and is a forum for representatives of community groups to raise concerns, provide feedback and provide input on how to maximise project benefits for the community.</p>	<p>Volume 1, Chapter 5 – EIS/EES assessment framework</p> <p>Volume 1, Chapter 8 – Community and stakeholder engagement</p>



Object*	Assessment approach	Relevant part of EIS/EES
<p>(e)</p> <p>To assist in the co-operative implementation of Australia's international environmental responsibilities</p>	<p>The project seeks to support a greater use of renewable energy sources in Australia into the future. Improved access to low GHG emitting renewable energy and improved efficiency of the electricity grid will contribute to the Commonwealth Government's goal of reducing net GHG emissions 43% below 2005 levels by 2030 (under the Paris Agreement), Victoria's emission reduction target of net GHG emissions to zero by 2045 and Tasmania's emission reduction goal of net zero GHG emissions, or lower, from 2030 (under the Climate Change (State Action) Act 2008 (Tas)). As a result, higher GHG emitting energy sources can be phased out and replaced by low GHG emitting renewable energy.</p> <p>A detailed assessment has been completed of potential impacts to MNES, protected under international treaties of which Australia is party. The project will be delivered and operated in a manner that supports Australia's commitments to relevant international treaties and conventions that relate to threatened species and communities and migratory species:</p> <ul style="list-style-type: none"> <li>➤ <i>the Biodiversity Convention</i></li> <li>➤ <i>Apia Convention</i></li> <li>➤ <i>Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)</i></li> <li>➤ <i>Convention on the Conservation of Migratory Species of Wild Animals (The Bonn Convention)</i></li> <li>➤ <i>China Australia Migratory Bird Agreement (CAMBA)</i></li> <li>➤ <i>East Asian – Australasian Flyway Partnership</i></li> <li>➤ <i>Japan Australia Migratory Bird Agreement (JAMBA)</i></li> <li>➤ <i>Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA)</i></li> <li>➤ <i>Agreement on the Conservation of Albatrosses and Petrels</i></li> </ul>	<p>Volume 1, Chapter 9 –Sustainability, climate change and greenhouse gas emissions</p> <p>Volume 2, Chapter 2 – Terrestrial Ecology</p> <p>Volume 3, Chapter 2 — Marine ecology</p> <p>Volume 4, Chapter 11 – Terrestrial ecology</p>
<p>(f)</p> <p>To recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity</p>	<p>MLPL acknowledge the First Peoples of the Country on which the project is proposed in Tasmania, Bass Strait, and Victoria.</p> <p>In Victoria, MLPL has engaged equally with the three First Peoples groups:</p> <ul style="list-style-type: none"> <li>➤ Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC)</li> <li>➤ Boonwurrung Land and Sea Council (BLSC)</li> <li>➤ Bunurong Land Council Aboriginal Corporation (BLCAC)</li> </ul> <p>MLPL have directly engaged two Aboriginal Engagement Advisors to support establishment and ongoing facilitation of the Marinus Link FPAG. The FPAG is chaired by the MLPL Aboriginal Engagement advisor and meets regularly with MLPL to discuss project impacts, challenges and opportunities specific to Aboriginal cultural heritage. These meetings provide valuable opportunities for cultural exchange, understanding and capacity-building.</p> <p>In Tasmania, MLPL has engaged with Aboriginal Heritage Tasmania and commenced engagement with members of the Tasmanian Aboriginal Centre. MLPL has discussed a collaborative approach to First Peoples engagement in Tasmania, with related major projects and organisations (e.g. Renewables, Climate and Future Industries Tasmania (RECFIT), Hydro Tasmania, North West Transmission Development projects) to plan coordinated engagement that is both culturally appropriate and addresses the needs of the Tasmanian Community.</p>	<p>Volume 1, Chapter 8 – Community and stakeholder engagement</p>

Object*	Assessment approach	Relevant part of EIS/EES
<p>(g)</p> <p>To promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.</p>	<p>MLPL has engaged with First Peoples in Victoria and Tasmania throughout the project. MLPL has committed to ongoing engagement with First Peoples throughout the delivery of the project. Engagement will also continue in the preparation of a cultural values assessment (CVA) for onshore and offshore country in Victoria, which will provide a greater understanding of intangible Aboriginal cultural values in the study area.</p> <p>The CVAs will be supported by ongoing engagement with the project's engagement First Peoples Advisory Group. The scope of the CVAs will cover both terrestrial landscapes and marine submerged landscapes.</p>	<p>Volume 1, Chapter 8 – Community and stakeholder engagement</p>

\*Extracted from Section 3, Environment Protection and Biodiversity Conservation Act 1999 ([legislation.gov.au](http://legislation.gov.au))

### 1.1.3 Impacts on Matters of National Environmental Significance

This section provides a summary of the potential impacts on MNES protected under the EPBC Act. The objective of the following sections is to outline the key conclusions regarding the potential project impacts to MNES to inform a decision by the Minister for the Environment and Water as to whether the predicted impacts to MNES are acceptable. The assessment of impacts to MNES in accordance with the EPBC Act and EIS guidelines concluded that, with the implementation of measures to comply with the proposed EPRs, the project will not have a significant impact on threatened species, migratory species or ecological communities in the terrestrial or marine environments.

This section draws on the discussion from other chapters of the EIS/EES including:

- Volume 2, Chapter 2 – Terrestrial ecology (Tasmania)
- Volume 3, Chapter 2 – Marine ecology
- Volume 3, Chapter 3 – Marine resources
- Volume 3, Chapter 4 – Underwater cultural heritage
- Volume 4, Chapter 11 – Terrestrial ecology (Victoria)
- Volume 5, Chapter 2 – Environmental Management Framework

The assessment has considered relevant international obligations and conventions, recovery plans, threat abatement plans and conservation advice that relates to threatened species and communities and migratory species.

#### Listed threatened species and ecological communities

Most of the project alignment has been highly modified by human activities, comprising predominantly of agricultural, rural living and forestry plantation land. Native vegetation (scrubs, woodlands and forests) and associated habitat has largely been cleared from farmland, with small, fragmented patches along road reserves, property boundaries, creek lines and scattered tress. Throughout the project alignment, there is ecologically valuable native vegetation alongside roads and rail lines.

The key project activity that is likely to have direct impacts on terrestrial ecological values is the clearing of vegetation within the AoD. Consequential loss of vegetation has also been considered as an indirect impact, where soil excavation or compaction impacts on the roots of adjacent trees or shrubs causing death or decline. Consequential loss of vegetation as an indirect impact is considered to have a lower magnitude of impact compared to clearing, as the vegetation and associated resource as habitat is likely to persist for some time, continuing to provide habitat value.

Other potential direct and indirect impacts to ecological values during construction are likely to occur from vehicle collision, noise, vibration, light, dust, and the introduction of weeds or pest species. The majority of these impacts will have a low magnitude of impact due to the temporary or short-term nature as the construction workforce moves along the project alignment. The release of dust or other pollutants, or the

introduction of pests or weed species poses risk of a longer-term impacts to ecological values, as this can lead to a decline in health or mortality of ecological values if not managed appropriately.

The terrestrial ecology impact assessment included a review of available literature and field surveys to understand the existing ecological values in the study area. A significant impact assessment was then completed for MNES protected under the EPBC Act. The assessments have been completed against criteria from the *Significant Impact Guidelines 1.1* (Department of the Environment 2013) for each of the potentially impacted listed threatened species and communities, including critically endangered and endangered threatened ecological communities (TECs), critically endangered and endangered species, and vulnerable species.

The significance impact assessment outcomes are discussed in the following sections.

### **Threatened flora and ecological communities in Victoria**

In Victoria, the terrestrial ecology impact assessment identified the likely presence of the following threatened flora: river swamp wallaby-grass (listed as vulnerable under the EPBC Act), eastern spider orchid (listed as endangered under the EPBC Act), thick-lipped spider-orchid (listed as vulnerable under the EPBC Act), Strzelecki Gum (listed as vulnerable under the EPBC Act), dense leek-orchid (listed as vulnerable under the EPBC Act), green-striped greenhood (listed as vulnerable under the EPBC Act) and leafy greenhood (listed as vulnerable under the EPBC Act).

Field surveys identified a large population of river swamp wallaby-grass in a small wetland adjacent to the Morwell River the Latrobe Valley landscape region, while the other species woodland flora are considered present due suitable habitats and historical records. Without the implementation of measures to comply with EPRs the project will lead to the removal of 0.82 ha of suitable growth and reproduction habitat for this species. With the successful implementation of measures to comply with the EPRs however, the area of habitat impacted by the project may be reduced to less than 0.4 ha.

Strelecki gum occur across the project area, with 104 individuals identified during field surveys. Only a single Strzelecki gum tree is impacted by the project prior to the implementation of measures to comply with EPRs. Overall, direct and indirect impacts can be reduced or managed through the implementation of measures to comply with EPRs. Therefore, the project is unlikely to interfere with the recovery of these species and is unlikely to have a significant impact.

Field surveys confirmed the presence of one nationally listed TEC in the study area, the Gippsland Red Gum Grassy Woodland (listed as critically endangered under the EPBC Act). Without the implementation of measures to comply with EPRs, the project will have direct impacts on 0.11 ha of the threatened community. This community is identified as an area of critical habitat to be avoided through the implementation of measures to comply with EPRs. Overall, direct and indirect impacts can be avoided or managed through the implementation of measures to comply with EPRs. Therefore, the project is unlikely to interfere with the recovery of this TEC, and is unlikely to have a significant impact on this TEC.

## Threatened flora and ecological communities in Tasmania

In Tasmania, no threatened flora species or communities were identified within the Heybridge converter station site or the shore crossing survey areas and therefore the project is not likely to have a significant impact.

## Threatened fauna in Victoria

The assessment identified potential habitat for a threatened aquatic species, a frog species, a reptile species, two woodland and forest birds, a water bird and two mammals.

The review identified suitable habitat for one threatened fish species, dwarf galaxias (listed as vulnerable under the EPBC Act), and the potential occurrence of the one threatened frog species, growling grass frog (listed as vulnerable under the EPBC Act).

Targeted surveys were completed for the growling grass frog in accordance with the EPBC Act *Survey Guidelines for Australia's Threatened Frogs* (DSEWPC 2011) and suitable habitat *Guidelines for the Vulnerable Growling Grass Frog Litoria raniformi* (DEWHA 2010). Although no individuals were recorded during the targeted surveys, their presence is assumed due to the presence of suitable habitat in the study area. The terrestrial ecology desktop assessment did not identify known important populations of dwarf galaxias within the survey area. The assessment found project activities will not directly disturb habitat for the growling grass frog and dwarf galaxias. Direct impacts to these species will be largely avoided through the application of trenchless construction methods to pass under suitable habitat. Indirect impacts to these species include the release of pollution and sediment into waterways, introduction of pests or weed species and potential light pollution generated by construction activities. Overall, there will be no direct impacts to habitat for this species, and indirect impacts can be reduced through the implementation of measures to comply with EPRs. Therefore, the project is unlikely to interfere substantially with the recovery of the growling grass frog and dwarf galaxias and is unlikely to have a significant impact on the species.

The terrestrial ecology desktop assessment identified the potential occurrence of one threatened reptile species, the swamp skink (listed as endangered under the EPBC Act), as likely to occur within the survey area. Targeted fauna surveys did not identify any occurrence of the swamp skink however, their presence is assumed where critical habitat is located. The swamp skink has approved conservation advice under the EPBC Act and key threats to the species include the introduction of pest species and removing key habitat resources. The project will lead to the removal of suitable habitat for this species however, this is not expected to lead to the fragmentation of available habitat and the species is expected to utilise the available surrounding habitat. Overall, the removal of potential suitable habitat is counter to the recovery for the swamp skink however, the extent and nature of vegetation removal in the context of available suitable habitat within the broader locality is unlikely to interfere with the recovery of or significantly impact this species.

The terrestrial ecology desktop assessment identified suitable habitat for two woodland and forest bird species, gang-gang cockatoo (listed as endangered under the EPBC Act) and blue-winged parrot (listed as vulnerable under the EPBC Act), and their presence is assumed in the study area. The project will result in the removal of a small area (2.5 ha) of the available habitat for these species, however this will not lead to the fragmentation of the habitat and the species is expected to utilise the available surrounding habitat. Overall, the amount of habitat to be removed represents a small proportion of the available habitat in the region, therefore it is unlikely that project activities will interfere with the recovery of these species or result in a significant impact.

The terrestrial ecology desktop assessment identified critical habitat in the study area for the following threatened inland waterbird species:

- The Australasian bittern which is listed as endangered under the EPBC Act.
- The sharp-tailed sandpiper, Caspian tern and Latham's snipe which are listed as marine and migratory under the EPBC Act.
- The cattle egret, little egret, musk duck and eastern great egret which are listed as marine under the EPBC Act).

The terrestrial ecology desktop assessment identified critical habitat in the study area for the following threatened shorebird species.

- The red knot and lesser sand plover which are listed as endangered, marine and migratory under the EPBC Act.
- The greater sand plover which is listed as vulnerable, marine and migratory under the EPBC Act.
- The eastern curlew which is listed as critically endangered, marine and migratory under the EPBC Act.
- The fairy tern and hooded plover which are listed as vulnerable and marine under the EPBC Act.

The project will largely avoid direct impacts to suitable habitat through the use of trenchless construction methods for the shore crossing and major waterways. Indirect impacts to these species include the release of pollution or sediment into watercourses and behavioural disturbances generated by noise and light pollution. These indirect impacts will be managed through the implementation of measures to comply with EPRs such as restricting works near waterways and in close proximity to critical habitat. Overall, indirect impacts will be short-term and can be suitably managed through the application of measures to comply with EPRs. The terrestrial ecology assessment found there will be no direct impacts to habitat for these species. Therefore, the project is not likely to substantially interfere with the recovery of these species and is not likely to have a significant impact.

Two threatened mammals, the greater glider (listed as endangered under the EPBC Act) and the grey-headed flying-fox (listed as vulnerable under the EPBC Act), were identified as potentially occurring within the study area due to the presence of suitable habitat. Targeted field surveys covered five areas of suitable habitat for the greater glider within the Strzelecki Ranges and recorded no greater gliders. Target field surveys did however identify the presence of several other small arboreal mammals, which indicated that the greater glider would have been identified if it was present within the survey area. Based on these surveys there is a low likelihood of the greater glider being present along the project alignment, which is consistent with the findings of the assessments undertaken for the Delburn Windfarm located in the same area. The grey-headed flying fox was recorded within the survey area, utilising suitable foraging habitat. Direct construction impacts may include the removal of habitat, and disturbance from noise and light pollution. Overall, the amount of habitat to be removed for the project represents a small proportion of available habitat within the local area, therefore the project is unlikely to interfere with the recovery of the species or have a significant impact on the species.

Without the implementation of measures to comply with terrestrial ecology EPRs, the project is predicted to require removal of suitable habitat for the following EPBC Act listed species:

- 0.03 ha of habitat which supports the dwarf galaxias
- 2.51 ha of habitat of the gang-gang cockatoo and blue-winged parrot
- 1.27 ha of habitat for the swamp skink.

With the successful application of measures to comply with the terrestrial ecology EPRs, the project is predicted to require removal of suitable habitat for the following EPBC act listed species:

- 0.94 ha of habitat for the gang-gang cockatoo and blue-winged parrot
- 0.28 ha of habitat for the white-footed dunnart

No direct impacts to habitat suitable for the dwarf galaxias habitat are expected with the successful implementation of measures to comply EPRs.

### **Threatened fauna in Tasmania**

Two threatened mammals, the Tasmanian devil (listed as endangered under the EPBC Act), Spotted-tail quoll (listed as vulnerable under the EPBC Act) were identified with the potential to occur in the Heybridge study area. There are no records or observations of these species during field surveys, however there are records of roadkill for both species adjacent to the site on Minna Road and Bass Highway, indicating the species may pass through the site or utilise surrounding areas. The impact assessment identifies roadkill due to construction traffic as a potential impact to these species, and measures will be implemented to reduce the impacts on these species such as limiting speeds and educating drivers. With the implementation of measures to comply with EPRs, roadkill impacts are not likely to interfere with the recovery of this species and is not likely to result in a significant impact.

The assessment identified the potential for the Tasmanian wedge-tailed eagle (listed as endangered under the EPBC Act) and white-throated needletail (listed as vulnerable under the EPBC Act) to occur in the Heybridge study area. There are no known eagle nests within 1 km of the converter station or shore crossing and the project is therefore unlikely to result in a significant impact to the species. If new nests are established prior to the commencement of construction, there is the potential for the project to impact this species. Overall, with the implementation of measures to comply with EPRs, the project is unlikely to have a significant impact on the species.

## Threatened and listed migratory fauna in the marine environment

The project alignment across Bass Strait between Heybridge, Tasmania and Waratah Bay, Victoria is approximately 255 km. Commonwealth waters comprise the area outside the state 3 NM limit, excluding continental shelves to the west and east of the strait. This section lists the threatened marine species listed under the EPBC Act, which may occur within the marine study area. The assessment of impacts from project activities on potential habitat and fauna groups is discussed further below.

Three threatened pinnipeds, sub-Antarctic seal (listed as endangered under the EPBC Act), Australian sea lion (listed as endangered under the EPBC Act) and southern elephant seal (listed as vulnerable under the EPBC Act) may occur within the study area.

One threatened cetacean species, the spotted bottlenose dolphin, also known as Indo-Pacific bottlenose, may occur within the study area.

One marine invertebrate species, the species ghost shrimp (listed as endangered under the EPBC Act) may occur within the study area.

The marine ecology assessment identified the following listed migratory and threatened cetacean species under the EPBC Act that may occur within the marine study area:

- Humpback whale
- Southern right whale (also listed as endangered under the EPBC Act)
- Sei whale (also listed as vulnerable under the EPBC Act)
- Antarctic blue whale (also listed as endangered under the EPBC Act)
- Pygmy blue whale (also listed as endangered under the EPBC Act)
- Fin whale (also listed as vulnerable under the EPBC Act)
- Pygmy right whale
- Killer whale, or orca
- Dusky dolphin.

The marine ecology assessment identified the following migratory and threatened sea turtles, listed under the EPBC Act, that may occur within the marine study area:



- Loggerhead turtle (listed as endangered under the EPBC Act)
- Green turtle (listed as vulnerable under the EPBC Act)
- Leatherback turtle (listed as endangered under the EPBC Act)
- Olive ridley turtle (listed as endangered under the EPBC Act)
- Hawksbill turtle (listed as vulnerable under the EPBC Act)

The marine ecology assessment identified the following migratory and threatened bird species, listed under the EPBC Act, that may occur in the marine study area:

- Antipodean albatross (listed as vulnerable under the EPBC Act)
- Gibson's albatross (listed as vulnerable under the EPBC Act)
- Southern royal albatross (listed as vulnerable under the EPBC Act)
- Wandering albatross (listed as vulnerable under the EPBC Act)
- Northern royal albatross (listed as endangered under the EPBC Act)
- White-bellied storm-petrel (listed as vulnerable under the EPBC Act)
- Blue petrel (listed as vulnerable under the EPBC Act)
- Southern giant petrel (listed as endangered under the EPBC Act)
- Northern giant petrel (listed as vulnerable under the EPBC Act)
- Sooty albatross (listed as vulnerable under the EPBC Act)
- Gould's petrel (listed as endangered under the EPBC Act)
- Soft-plumaged petrel (listed as vulnerable under the EPBC Act)
- Buller's albatross (listed as vulnerable under the EPBC Act)
- Northern Buller's albatross (listed as vulnerable under the EPBC Act)
- Shy albatross (listed as endangered under the EPBC Act)
- Indian Yellow-nosed albatross (listed as vulnerable under the EPBC Act)
- Grey-headed albatross (listed as endangered under the EPBC Act)
- Campbell albatross (listed as vulnerable under the EPBC Act)
- Black-browed albatross (listed as vulnerable under the EPBC Act)
- Salvin's albatross (listed as vulnerable under the EPBC Act)
- White-capped albatross (listed as vulnerable under the EPBC Act)
- Australian fairy tern (listed as vulnerable under the EPBC Act)
- Southern fairy prion (listed as vulnerable under the EPBC Act)

The marine ecology assessment identified the following migratory and threatened fish species, listed under the EPBC Act, that may occur within the marine study area:

- White shark (listed as vulnerable under the EPBC Act)
- School shark (listed as critically endangered under the EPBC Act)

- Australian grayling (listed as vulnerable under the EPBC Act)
- Southern Bluefin Tuna (listed as critically endangered under the EPBC Act)
- Blue warehou (listed as critically endangered under the EPBC Act).

The assessment of potential sources of impacts to migratory marine species is discussed further below (The environment of the Commonwealth marine area).

## Listed migratory species in Victoria

The terrestrial ecology assessment for Victoria identified suitable habitat in the study area for the following listed migratory shorebird species under the EPBC Act:

- common sandpiper
- Caspian tern
- little tern
- sanderling
- red-necked stint
- double-banded plover
- crested tern
- red knot (also a listed endangered threatened species)
- lesser sand plover (also a listed endangered threatened species)
- greater sand plover (also a listed vulnerable threatened species)
- eastern curlew (also a listed critically endangered threatened species).

The assessment was completed in accordance with the *Significant impact guidelines for 36 migratory shorebird species – Migratory species* (DEWHA 2009). A majority of these species, with the exception of the Caspian tern, have breeding areas outside of Australia. The potential breeding grounds for the Caspian tern will not be disturbed as the use of HDD will avoid direct impacts to the dune system. Indirect impacts including the generation of noise and light pollution will be managed through the implementation of measures to comply with EPRs, including restricting works near waterways and in close proximity to critical habitat to avoid impacts to species.

The terrestrial ecology assessment identified suitable habitat in the Victorian study area for the threatened migratory waterbirds, the sharp-tailed sandpiper and marsh sandpiper, and suitable habitat for the woodland birds, satin flycatcher and rufous fantail. These species are highly mobile and there is suitable habitat available throughout the region. The project will largely avoid direct impacts to suitable habitat through the use of trenchless construction methods. Indirect impacts generated by the project, including the release of pollution or sediment into watercourses, of behavioural disturbances generated by noise and light pollution will be managed through the implementation of measures to comply with EPRs, including restricting works near waterways, and works in close proximity to critical habitat to avoid impacts to species.

## Listed migratory species in Tasmania

The assessment for Tasmania identified the potential of the migratory fork-tailed swift and white-throated needletail (listed as vulnerable under the EPBC Act) to occur in the Heybridge study area in Tasmania. The impacts of vegetation clearance are expected to be minimal, and the project is not expected to impact these

species. A biodiversity management plan will be implemented to avoid and minimise impacts to flora and fauna values. The biodiversity management plan will include flora and fauna species management measures which will limit construction activities within critical habitats during sensitive life-stages (e.g., breeding, nesting, etc.).

Overall, with the implementation of measures to comply with EPRs it is considered unlikely that the project will result in a significant impact on migratory species protected under the EPBC Act.

## The environment of the Commonwealth marine area

Project activities will be undertaken within the Commonwealth 'South-east Marine Region' which is within the Commonwealth marine area (CMA). Within the CMA, project construction, operation and decommissioning will be concentrated within Bass Strait which is characterised by large areas of low nutrients and primary productivity with significant variation in water depth and seafloor features. The broader Bass Strait is known for its sea-floor canyons and shelf habitats, which along with key ocean currents which create unique habitats for marine flora and fauna. Bass Strait has seabed habitat that supports benthic communities and marine fauna including, cetaceans, pinnipeds, sea turtles as well as marine birds, fishes and invertebrates. Many of these species only travel pass through the CMA or only present during particular seasons.

Bass Strait is used for domestic and international shipping, commercial and recreational fishing and aquaculture, as well as private boating and passenger ferries. Within Bass Strait there is also existing subsea infrastructure such as an existing HVDC cable (Basslink) and telecommunications cables. A range of desktop and field assessments were undertaken to determine the level of impact to EPBC Act listed and protected species within the CMA. The marine ecology assessment found that implementation of standard management and mitigation measures to comply with the EPRs will reduce construction and operation impacts to low or very low residual impacts to EPBC Act listed and protected species within the CMA. With the implementation of EPRs it is considered unlikely that the project will result in significant impacts on values within the CMA.

The marine ecology technical assessment considered the impact of project activities on habitat and fauna groups and is summarised in the sections below.

### **Marine impacts arising from cable lay activities**

Cable-laying activities in the CMA will disturb the seabed of Bass Strait which has habitat for a range of benthic communities and will also temporarily impact water quality in the localised area where cable-laying activities will occur. The section of Bass Strait where the project is located is flat and predominantly sandy. Approximately 0.4 km<sup>2</sup> of the seabed within Bass Strait will be disturbed by cable-laying activities. This represents a very small area of Bass Strait, with impacted seabed expected to recover within one year, assisted by the redepositing of sediment and sand within the water column within the waters of Bass Strait.

Implementation of standard management and mitigation measures that comply with the EPRs will minimise seabed disturbance from cable-laying activities. The expected impacts to marine water quality from construction activities have been assessed as negligible, given the small section of Bass Strait that is to be impacted and the short period in which construction activities will be undertaken. Overall, the impacts arising

from cable placement within the CMA to benthic communities and seabed habitat are considered to be negligible.

### **Marine impacts from underwater noise**

Underwater noise from construction activities such as subsea cable-laying, have the potential to impact cetaceans. Detailed assessment of the range and magnitude of underwater noise found that it is highly unlikely that cetaceans, such as the Southern right whale (listed as endangered under the EBPC Act), the Pygmy blue whale (listed as endangered under the EBPC Act) and species such as the leatherback / leathery turtle (listed as endangered under the EBPC Act) would remain in proximity to high-frequency underwater noise for extended periods. These species were assessed as being more likely to avoid areas of localised construction noise altogether. The marine ecology assessment also found behavioural impacts due to underwater noise during cable lay activities will be low due to the short-term and localised nature of construction noise associated with subsea cable laying. In the marine nearshore zone in Waratah Bay where the cable pulling takes place over a longer duration in one location (about ten days), no significant impact is expected to cetaceans protected under the EPBC Act.

No mortality of cetaceans and sea turtles arising from underwater construction noise is anticipated as it is highly likely that these species will avoid localised disturbances of excessive noise. Other species such as the little penguin, diving seabirds and cephalopods are not expected to be affected by underwater marine noise arising from construction activities as their exposure to such noise will only be for short periods.

The impacts to marine fauna arising from underwater noise are considered to be low to negligible.

### **HVDC cables and electromagnetic fields (EMF)**

The anticipated impacts to cetaceans and pinnipeds, such as the humpback whale, the elephant seal, and sea turtles, from magnetic and EMF during the operation of the project are expected to be low. The magnetic fields from the cable bundles will reduce to background geomagnetic levels within 10 m of the project alignment and exposure will only be transitory depending on an individual marine fauna's speed of movement through the ocean. No magnetic field impacts are predicted for pelagic or surface-swimming sharks due to the magnetic field being similar to background levels in the upper water column. Some marine birds have magneto-sensory capabilities; however, species such as the Northern royal albatross (listed as endangered under the EBPC Act), the Southern giant petrel, Gould's petrel, Shy albatross, Grey-headed albatross (all listed as endangered under the EBPC Act) are unlikely to use this while diving underwater where the cable's magnetic fields are expected to be at or near background levels.

The residual impacts to skates, rays and sharks such as the Great White shark (listed as vulnerable under the EBPC Act) are assessed to be very low as the electric field strengths will be at insufficient strength to cause displacement. The increased thermal field will not be distinguishable at the seabed surface and will also not have any adverse impacts on fauna in this upper zone. During operation, the energised HVDC cable will generate a weak EMF at or near background levels both at and above the sea surface and will not impact magnetosensitive marine fauna.

## Underwater cultural heritage

The underwater cultural heritage assessment did not identify any maritime or Aboriginal cultural heritage artefacts in the offshore sections of the study area. The geophysical surveys did not identify any potential shipwrecks, dumping sites or vessel discards, however their presence cannot be entirely discounted. A review of historical resources identified 16 shipwrecks that could be in the offshore section of the study area. It is unlikely that a shipwreck or vessel discard will be in the area of disturbance and be impacted by project activities. A management plan for underwater cultural heritage will be implemented to avoid and minimise any impacts.

Review of the geophysical data identified 72 geophysical anomalies in the offshore section of the study area. There are five anomalies within 10 m of the alignment which could be impacted. Minor realignment of the project alignment with the recommended buffers will avoid impacts to the anomalies. If realignment is not feasible, the anomalies should be assessed for their cultural heritage value using a remotely operated vehicle (ROV). Review of the ROV footage will then allow a qualified maritime archaeologist to determine if the anomalies are heritage sites and what mitigation measures must be implemented to avoid impacts.

In the Victorian nearshore study area, geophysical data identified a beach ridge strandplain approximately 3 km from the shoreline at 17 m to 22m water depth, which is approximately 1.5 km wide. The last time sea level was at this elevation for long enough to produce such a landform was around 80,000 years ago, indicating it formed prior to human occupation and therefore would have been inland, rather than coastal, when humans were in this region.

Submerged beach ridge formations were identified within 20 km of the Tasmanian coast, present at depths ranging from 45 m to 70 m water depths. This submerged landform has the potential to hold Aboriginal cultural heritage artefacts, though it is unlikely. Project activities will only impact to 1.5 m below the seabed, while submerged landform is buried approximately 2 m below the seabed. Therefore, project activities are not expected to impact Aboriginal cultural heritage artefacts in the offshore section of the study area.

A management plan for underwater cultural heritage will be developed, detailing measures to avoid and minimise impacts on underwater cultural heritage and archaeology. MLPL will continue to engage with relevant First Peoples groups to understand intangible heritage values, including an understanding of submerged intangible values.

## Users of the CMA

No long-term residual impacts are expected to commercial or recreational affect users of the marine environment arising from the project's construction or operation within the CMA. Minor changes to marine transport routes and commercial fishing and marine resource use are anticipated where these uses, such as marine transport and recreational or commercial fishing, occur in proximity to the cable lay vessel as exclusions zones will be in force during construction. These exclusion zones are temporary and are expected to only apply during construction where the cable lay vessels are located during construction. The overall impact to users of the CMA is low.

## **Vessel discharges and unplanned spills**

There is no planned disposal of waste to the marine environment during the construction, operation or decommissioning of the project. All marine construction vessels will comply with the marine discharge and waste management regulations as they apply in Victoria, Tasmania and the CMA . On this basis, the risk of marine pollution arising from construction activities is as low as reasonably practical.

The construction environmental management plan (CEMP) will document measures for incident notification and management, including managing unplanned spills.

## **Invasive marine species**

There are 21 invasive marine species (IMS) identified within the study area. The overall risk of introduction of IMS from vessel movements during the construction of the project is low. Through the implementation of measures to avoid the introduction of invasive marine species, as documented in a ballast water management plan, the project is expected to have a low risk of introducing or translocating IMS.

## **1.1.4 Economic and social matters**

The project will support Australia's transition to renewable energy by providing another connection between Tasmania and the NEM, and increasing access to Tasmania's wind and hydro power, as well as proposed pumped hydro long duration energy storage resources. By increasing energy exchange between Victoria and Tasmania, the project is expected to unlock renewable energy generation opportunities and cost-effective energy storage in Tasmania, and support supply of affordable, reliable and clean energy across the NEM. The project will enable a greater use of renewable energy sources in Australia into the future, supporting Commonwealth Government's goal of reducing net GHG emissions 43% below 2005 levels by 2030 under the Paris Agreement. Implementation of the project will support a low emission energy future, strengthening the global response to climate change.

Positive and negative impacts will occur from the construction, operation and decommissioning of the project. The construction of the project will generate noise, vibration, dust and visual disturbance, leading to short-term and temporary changes in amenity. A social impact management plan will be developed in consultation with community members and relevant stakeholders to document key strategies for managing social impacts. Community complaints will be recorded and managed through a management system, documented in the community and stakeholder engagement framework.

The influx of workers for the project has the potential to place additional pressure on rental vacancy rates in several locations in the study area during the construction period. There is also the potential for cumulative impact on housing availability and affordability for low income households due to other major projects proposed in the region. Additional pressure may also be placed on local infrastructure and services, including emergency services providers. The project will develop measures to address cumulative impacts on accommodation due to other large-scale construction and infrastructure projects. These measures will be documented in a workforce and accommodation strategy and incorporated into the project's social impact management plan.

The procurement of goods and services required to support the project's development will support local businesses, contributing to a positive outcome for the community. The construction phase of the project is also likely to bring significant long-term economic benefits to Victoria and Tasmania. Over the intended 40-year operation of the project, an additional \$1.7 billion of gross economic product is expected to be added to the Victorian and Tasmanian economies. Both the construction and operation of the project are likely to provide opportunities for an increase of regional workforce skills and experience by drawing employees from the communities in which the project will be built and operate.

Project construction activities have the potential to temporarily disrupt commercial and recreational uses of the CMA principally through the need for temporary exclusion zones for maritime traffic movements and anchoring. The project alignment is not within proximity to any ports in nearshore Victoria or Tasmania, therefore impacts to marine vessel berthing or movement are not anticipated. Interactions with other marine vessels navigation and transit through the CMA are predicted to be minor with no residual ongoing impacts during operation. It is not expected that an exclusion zone around the cable will be required. Magnetic fields generated by the cable will not affect GPS navigation for marine vessels. On this basis, subject to minor alterations to usual shipping, fishing and transport activities for short periods the impacts on economic and social uses of the CMA are anticipated to be low.

### 1.1.5 Proponent's environmental history

MLPL was formed in 2018 for the purpose of constructing the project. The Commonwealth, Victorian and Tasmanian governments have agreed to shared ownership of MLPL with the Commonwealth to have a 49%, Victoria a 33.3% and Tasmania a 17.7% shareholding.

MLPL has no past or present proceedings against it under a Commonwealth, State or Territory law. MLPL is committed to good industry practice to deliver long term benefits to stakeholders with a focus on compliance with relevant legislative and regulatory requirements. MLPL has developed a project-specific environment and sustainability policy (detailed in Volume 1, Chapter 9 – Sustainability, climate change and greenhouse gas emissions). This policy (MLPL 2023) includes a commitment to minimise impacts on the environment from the project and apply principles of sustainability in its the construction, operation and decommissioning.

## 1.2 Victoria

The project has been assessed against the evaluation objectives as set out in the EES Scoping requirements. The evaluation objectives provide a framework for an integrated assessment of environmental effects and for evaluation of the overall implication of the project. They will assist the Minister for Planning to determine whether the environmental effects of the project would be acceptable.

A summary of the assessment of the project against the evaluation objectives is provided in the following sections. Attachment 2 includes a checklist showing where all the requirements of the EES Scoping Requirements have been addressed in the EIS/EES.

### 1.2.1 Biodiversity and ecological values

*EES evaluation objective 1 – Avoid, and where avoidance is not possible, minimise adverse effects on terrestrial, aquatic and marine biodiversity and ecology, including native vegetation, listed threatened species and ecological communities, other protected species and habitat for these species, and to address offset requirements consistent with state policies.]*

The EIS/EES chapter relevant to this evaluation objective include:

- Volume 4, Chapter 11 – Terrestrial ecology

#### Flora and ecological communities

Due to the presence of suitable habitat, three threatened flora species were assumed to be present within the coastal dunes system bordering Waratah Bay, coast wirilda (listed as endangered under the FFG Act), coast bitter-bush (listed as endangered under the FFG Act), coast colobanth (listed as endangered under the FFG Act). Direct impacts to the coastal dunes systems will be avoided through the use of HDD, therefore the project is not expected to impact coastal dune species in Waratah Bay.

Suitable habitat within lowland forest and heathy woodland remnants surrounding Waratah Bay, was identified for 12 woodland flora species including the eastern spider orchid (listed as endangered under the FFG Act), currant-wood (listed as endangered under the FFG Act), silver everlasting, lizard orchid (listed as endangered under the FFG Act), orange-tip finger orchid, slender pink fingers, spurred helmet-orchid, fringed helmet-orchid, cobra greenhood, rush lily (all listed as vulnerable under the FFG Act), slender fork-fern and small fork-fern (both listed as endangered under the FFG Act). Without the implementation of measures to comply with terrestrial ecology EPRs the project will lead to the removal of 1.27 ha of suitable growth and reproduction habitat for these woodland flora species. With the successful implementation of measures to comply with the EPRs, the area of habitat impacted by the project may be reduced to less than 0.3 ha.

Within the damp or wet forests in the Strzelecki Ranges, the assessment identified the potential presence of:

- three flora species, alpine sun-orchid (listed as critically endangered under the FFG Act), slender fork-fern (listed as critically endangered under the FFG Act) and the oval fork-fern (listed as endangered under the FFG Act)
- One threatened fungus species, the two-tone vibrissae (fungus) (FFG Act endangered).



The construction of the project will remove habitat suitable for these species and generated dust, pollutants and sediments into the environment can cause ecological impacts if not managed.

Without the implementation of measures to comply with terrestrial ecology EPRs the project would result in the removal of 1.24 ha of suitable growth and reproduction habitat for these damp or wet forest species of the Strzelecki Ranges. With the successful implementation of measures to comply with the EPRs, the area of habitat impacted by the project may be reduced to less than 0.7 ha.

The assessment identified three threatened Eucalyptus species as potentially occurring in the study area, the Strzelecki gum (listed as critically endangered under the FFG Act), bog gum (listed as critically endangered under the FFG Act) and Yarra gum (listed as critically endangered' under the FFG Act). Direct construction impacts will likely include the removal of individual trees or patches. Indirect construction impacts may include works within tree protection zones, trimming of branches introducing pest species or diseases, and release of pollutants or dust. The potential impacts to Strzelecki gum and Yarra gum are localised to one and three trees respectively and will be managed through EPRs requiring the implementation of measures to avoid direct impacts to these trees.

The project has the potential to impact several large populations of bog gum. These impacts are potentially irreversible (>10 years to recover) without implementing mitigation measures. Vegetation quality assessments will be required to understand the extent of the unsurveyed bog gum populations before construction commences. With the implementation of measures to comply with EPRs, impacts to some populations of bog gum can be avoided.

The assessment identified one threatened community in the study area, Forest Red Gum Grassy Woodland Community and/or Central Gippsland Plains Grassland (listed as critically endangered under the FFG Act). The use of trenchless construction methods such as HDD will avoid direct impacts to this community, while EPRs require the minimisation of the removal of vegetation, to avoid fragmentation and avoid the introduction of weeds and pests.

Without appropriate mitigation, the project would lead to the removal of 0.11 ha of Forest Red Gum Grassy Woodland Community and/or Central Gippsland Plains Grassland. This community is identified as an area of critical habitat to be avoided through the implementation of measures to comply with EPRs. With mitigation measures in place, impacts to this community will be avoided.

The project will avoid, and where avoidance is not possible, minimise adverse effects on flora and ecological communities through the use of mitigation measures (such as HDD) to avoid direct impacts to these values.

Offsets under the *Guidelines for removal, destruction or lopping of native vegetation* (DELWP 2017a) are required based on the worst case scenario for impacts to terrestrial ecology, with a total impact of up to 21.14 ha of native vegetation.

Based on the worst case scenario, state offsets are required for the removal of:

- 0.984 general habitat units
- 3.833 species units of habitat for eastern spider-orchid
- 14.740 species units of habitat for Strzelecki gum

- 184 large trees

State offsets are available in order to comply with the *Guidelines for removal, destruction or lopping of native vegetation* (DELWP 2017a).

## Fauna

The terrestrial ecology assessment completed a review of available literature and field surveys to understand the existing values and threatened flora within the study area. The review identified the potential occurrence of:

- three aquatic species, flinders pygmy perch (listed as endangered under the FFG Act), dwarf galaxias (listed as endangered under the FFG Act) and platypus (Listed as vulnerable under the FFG Act)
- two threatened freshwater crustacean species, the spiny crayfish and narracan burrowing crayfish (both listed as endangered under the FFG Act).
- two threatened frogs, growling grass frog (listed as vulnerable under the FFG Act) and southern toadlet (listed as endangered under the FFG Act).

Where direct impacts to waterways are likely, a site environmental management plan will be prepared with measures to manage risks to aquatic habitat. A biodiversity management plan will also be prepared, including measures to facilitate the retention of critical habitat. Direct impacts to these species will be largely avoided through the application of trenchless construction methods to avoid and minimise impacts.

Three threatened reptile species were identified as potentially occurring within the study area, the swamp skink, glossy grass skink and lace monitor (all listed as endangered under the FFG Act). The EPRs include requirements to minimise loss of key habitat resources and for measures to be implemented to avoid the introduction of invasive species.

Three threatened mammals the greater glider, grey-headed flying-fox and white-footed dunnart (all listed as vulnerable under the FFG Act) were identified as potentially occurring within the study area. Due to the mobility of the species, and the wide range of suitable habitat in and around the study area, construction and operation of the project is not expected to impact the species. Additional impacts, including noise and light pollution will be minimised during sensitive life-stages (e.g., breeding, nesting, etc.) near close habitats.

The terrestrial ecology assessment identified four threatened raptors, the grey goshawk (listed as endangered under the FFG Act), black falcon (listed as critically endangered under the FFG Act), white-bellied sea-eagle (listed as endangered under the FFG Act), and little eagle (listed as vulnerable under the FFG Act). Two threatened owl species were identified, the barking owl (listed as critically endangered under the FFG Act) and powerful owl (listed as vulnerable under the FFG Act). The project will lead to the removal of habitat and the generation of noise and light pollution. The EPRs requires implementation of measures to minimise the removal of critical habitat to the extent that is reasonably practicable. Additional impacts, including noise and light pollution will be minimised when construction is near critical habitats during sensitive life-stages (e.g., breeding, nesting, etc.).

The terrestrial ecology assessment identified nine threatened bird species as potentially occurring within the foreshore and dunes at Waratah Bay including the common sandpiper (listed as endangered under the FFG Act), red knot (listed as endangered under the FFG Act), greater sand plover (listed as vulnerable under the FFG Act), lesser sand plover (listed as endangered under the FFG Act), Caspian tern (listed as vulnerable under the FFG Act), eastern curlew (listed as critically endangered under the FFG Act), little tern (listed as critically endangered under the FFG Act), fairy tern (listed as critically endangered under the FFG Act), hooded plover (listed as vulnerable under the FFG Act) and red-necked stint. Construction at the Waratah Bay shore crossing will utilise HDD to avoid coastal habitat. Additional impacts, including noise and light pollution will be minimised when construction is close to critical habitats during sensitive life-stages (e.g., breeding, nesting, etc.) through restricting construction works .

The terrestrial ecology assessment identified ten threatened bird species as potentially occurring within watercourses, well vegetated wetlands and dams and areas/pastures prone to inundation located within the survey area including the hardhead (listed as vulnerable under the EPBC Act), Australasian bittern (listed as critically endangered under the FFG Act), Australian little bittern (listed as endangered under the FFG Act), Lewin's rail (listed as vulnerable under the FFG Act), blue-billed duck (listed as vulnerable under the FFG Act), Australasian shoveler and freckled duck (listed as endangered under the FFG Act), eastern great egret (listed as vulnerable under the Act), musk duck (listed as vulnerable under the FFG Act) and little egret (listed as endangered under the FFG Act). Due to the mobility of these species and the availability of suitable habitat the project is not expected to impact the species habitat. The installation of cable using HDD at major watercourse crossings will further reduce the impacts on habitat. Additional impacts, including noise and light pollution will be minimised when construction is close to critical habitat during sensitive life-stages (e.g., breeding, nesting, etc.) through restricting construction works.

Without the implementation of measures to comply with the terrestrial ecology EPRs, the project is expected to lead to the removal of suitable habitat for the following FFG listed species:

- 0.03 ha of habitat which supports the narracan burrowing crayfish, south Gippsland spiny crayfish, flinders pygmy perch, dwarf galaxias and platypus.
- 1.27 ha of habitat which supports the swamp skink, glossy grass skink, southern toadlet, southern toadlet.
- 4.17 ha of habitat which supports the grey-headed flying-fox and lace monitor.
- 2.51 ha of habitat which supports the grey goshawk.
- 4.58 ha of habitat which supports the powerful owl.
- 0.13 ha of habitat which supports the hardhead and cattle egret.

Following the implementation of measures to comply with terrestrial ecology EPRs, the project is expected to lead to the removal of suitable habitat for the following FFG listed species, including:

- 0.28 ha of habitat which supports the swamp skink, glossy grass skink, southern toadlet, southern toadlet.
- 1.08 ha of habitat which supports the grey-headed flying-fox and powerful owl.
- 0.94 ha of habitat which supports the grey goshawk.

The removal of habitat suitable for the narracan burrowing crayfish, south Gippsland spiny crayfish, flinders pygmy perch, dwarf galaxias, platypus and hardhead is not expected to occur with the successful implementation of measures to comply with the terrestrial ecology EPRs.

The project will avoid, and where avoidance is not possible, minimise adverse effects on terrestrial and aquatic biodiversity and ecology through implementing requirements to minimise loss of key habitat resources and restricting construction works in close proximity to critical habitat.

## 1.2.2 Marine and catchment values

EES evaluation objective 2 – *Avoid and, where avoidance is not possible, minimise adverse effects on land and water (including groundwater, surface water, waterway, wetland, and marine) quality, movement and availability.*

The EIS/EES chapters relevant to this evaluation objective include:

- Volume 3, Chapter 2 – Marine ecology
- Volume 4, Chapter 2 – Geomorphology and geology
- Volume 4, Chapter 3 – Contaminated land and acid sulfate soils
- Volume 4, Chapter 4 – Groundwater
- Volume 4, Chapter 5 – Surface water

### Marine

The project alignment extends approximately 255 km across Bass Strait between Heybridge, Tasmania and Waratah Bay, Victoria. The coastal waters of Victoria extend to the 3 nm limit, 5 km off the coast of Victoria. The marine environment is characterised by weak tidal currents in the nearshore Victoria, large-scale currents in offshore environment, a high wave climate and temporal and spatial ranges in water temperature. The use of HDD for the shore crossing will avoid most impacts to coastal environmental values and changes to coastal processes, to the backshore, foreshore, or intertidal zone.

The subsea project alignment does not cross any marine protected areas, however, does across biologically important areas for five species including cetaceans, birds and a shark species.

The marine ecology assessment identified one threatened seabed benthic species, Tasman grass-wrack (seagrass listed as endangered under the FFG Act) located in small patches within Waratah Bay. The use of

HDD will enable construction to largely avoid seabed benthic flora and fauna with the exception of a small area of Tasman grass-wrack. The Tasman grass seagrass is sparsely distributed at the HDD exit hole depth and the total expected impact area from HDD at the shore crossings is 18 m<sup>2</sup> for all exit holes effects a very small proportion of the total grass-wrack habitat (0.0002%). The physical disturbance and temporary changes to water quality generated by construction works in the near-shore area may impact a few individual plants, however, is not expected to impact the viability of the species. The total potential disturbance area for Tasman grass-wrack from cable trenching and burial is approximately 3,100 m<sup>2</sup>, which is 0.028% of the 11 km<sup>2</sup> of total habitat for the species in Waratah Bay.

The project alignment will cross a biologically important area for the southern humpback whale (critically endangered under the FFG Act), southern right whale (critically endangered under the FFG Act) and Burrunan dolphin (listed as critically endangered under the FFG Act), where these species are known to forage or feed. Through the implementation of measures to minimise impacts to the cetaceans, including a separation distance around cable laying works and cetaceans, noise generated by the cable lay vessel is unlikely to impact this species.

The southern royal albatross (listed as critically endangered under the FFG Act), Wandering albatross (listed as critically endangered under the FFG Act), sooty albatross (listed as critically endangered under the FFG Act), Buller's albatross (listed as endangered under the FFG Act), shy albatross (listed as endangered under the FFG Act) and grey-headed albatross (listed as endangered under the FFG Act) are known to forage in and around Bass Strait, however breeding activities are known to occur outside of Australia. Construction activities at the Waratah Bay shore crossing will utilise HDD to avoid coastal habitat. Additional impacts, including noise and light pollution will be minimised when construction is near critical habitat during sensitive life-stages (e.g., breeding, nesting, etc.) restricting construction works.

The following shore and wetland birds are either known to, likely to, or may be expected to occur in nearshore Victoria, and Bass Strait, including the Australian fairy tern (listed as critically endangered under the FFG Act), little tern (listed as critically endangered under the FFG Act), Caspian tern (listed as vulnerable under the FFG Act), white-bellied sea-eagle (listed as endangered under the FFG Act). Construction at the Waratah Bay shore crossing will utilise HDD to avoid coastal habitat. Additional impacts, including noise and light pollution will be minimised during sensitive life-stages (e.g., breeding, nesting, etc.) near close habitats will be mitigated through restricting construction works in close proximity to critical habitat.

The project will avoid, and where avoidance is not possible, minimise adverse effects on marine water quality, movement and availability through implementing measures to minimise the loss of benthic habitat and adopting construction methods to minimise impacts to marine fauna and water quality.

## Terrestrial

The project alignment travels approximately 90 km from the coastal area of Waratah Bay through the Strzelecki ranges to Hazelwood in the Latrobe Valley. The landscape is undulating with eight major waterways, drainage lines and many ephemeral waterways. It is a geomorphically active landscape, prone to change through landslides and erosion. The land is used predominantly for agricultural and forestry with several small rural communities located along the study area.

The project alignment will cross eight major waterways including the Morwell River, Little Morwell River, Tarwin River East Branch, northern tributary of the Tarwin River East Branch, southern tributary of the Tarwin River East Branch, Stony Creek, Buffalo Creek and Fish Creek. The surface water assessment has considered the impacts of the project on surface water, including flooding, changes to water quality and the physical form and stability of the waterway. The use of HDD will avoid direct impacts to major waterways, where it is technically feasible. HDD will be used to cross seven of the eight of the major waterway crossings. For other waterways, including the Little Morwell River, where trenching is the most appropriate crossing method, the EPRs require the preparation of a management plan to document the controls to be put in place to protect waterway values.

Methods for HDD under waterways, features and coastal dunes will be informed by geotechnical investigations. The EPRs require the implementation of measures to minimise potential for frac-outs, including minimum observations during drilling to detect frac-outs (such as loss of fluid circulation) and pressure relief methods. These measures will be required to be documented in a groundwater management plan. An erosion and surface water management plan, will identify controls to maintain the key hydrologic and hydraulic functionality of existing flow paths, retain existing flow characteristics and minimise erosion will minimise impacts from changing flow, alterations to waterways and any loss of flood plain storage due to construction activities. Where vegetation is cleared to ground level, impacts to land stability and geomorphic properties will be managed through engineering design and construction management. Additionally, a site drainage plan will be developed and implemented to minimise site run off and interaction between water and potentially unstable slopes. Flood modelling will be completed to inform design and construction to avoid and otherwise minimise impacts on flooding and erosion due to surface run off.

The groundwater assessment found temporary dewatering of the aquifers will occur where the cable trenches, joint pits or HDD related excavations are deep enough to intersect the groundwater. This process has the potential to cause groundwater drawdown which may impact terrestrial GDEs present along the project alignment, including native Swamp Scrub, Damp Heathy Woodland, Lowland Forest Mosaic, Swampy Riparian Woodland, estuarine wetland vegetation and riparian vegetation along creeks. EPRs require the development and implementation of methods to provide trench stability during construction, including methods to manage dewatering. Due to the localised nature and short duration (approximately two months) of dewatering activities, groundwater levels are expected to recover once dewatering ceases. The project will implement measures to minimise groundwater inflow into trenches, and adopt engineering controls during construction, when required.

The geomorphology and geology desktop assessment identified 13 trench sectors with a high residual impact and 69 sectors with moderate residual impact. The EPRs require further investigation and testing at these locations to assess uncertainty about ground conditions and landform stability (including evidence of slope instability, landslides, etc) to inform the design and site-specific construction methods.

The contaminated land assessment identified several potential sources of contamination in the study area including a former industrial site, PFAS containing sites, a petrol station and intensive agricultural practices, and two areas that have a high probability of containing acid sulfate soils. Impacts occur when project activities disturb these potential sources of contamination, or when construction materials leak or spill into

the environment and humans, flora and fauna, or waterbodies become exposed. To reduce the risk of disturbing potential sources of contamination and ASS, measures will be implemented to comply with EPRs, including realignments to avoid identified wastes and/or potential contamination and inspecting properties that have a medium or high risk of contamination that have not been previously accessed. The purpose of these inspections is to identify the location, types and extent of contamination in these areas. Prior to commencement of project works, EPRs will require the implementation of measures to prevent contamination of soil, surface water and groundwater water during construction activities, in accordance *Australian Standard AS1940 Storage Handling of Flammable and Combustible Liquids* and with reference to *EPA Victoria Publication 1698: Liquid storage and handling guidelines*. These measures will be documented in a contaminated land management plan, to be implemented during construction.

The project will avoid, and where avoidance is not possible, minimise adverse effects on land and water quality, movement and availability through implementing controls to protect land and waterway values and measures to utilise cable backfill material, and minimise site run off.

### 1.2.3 Cultural heritage

EES evaluation objective 3 – *Protect, avoid and where avoidance is not possible, minimise adverse effects on historic heritage values, and tangible and intangible Aboriginal cultural heritage values, in partnership with Traditional Owners.*

The EIS/EES chapters relevant to this evaluation objective include:

- Volume 3, Chapter 4 – Underwater cultural heritage
- Volume 4, Chapter 13 – Aboriginal cultural heritage
- Volume 4, Chapter 14 – Non-Indigenous cultural heritage

### Terrestrial

The cultural heritage desktop assessment considered the natural environment, ethnohistory, and available literature. A predictive model was also created to identify areas of potential Aboriginal archaeological sites. Field surveys included archaeological ground surveys and a subsurface testing program along the construction corridor and the full width of the survey area at water crossings, areas of cultural heritage sensitivity and key project components. Of the 96 Aboriginal cultural heritage places recorded in the Victorian Aboriginal Heritage Register in the study area, 13 are in the survey area. The field work assessment identified 28 cultural heritage places within the survey area, one artefact scatter/ochre quarry, ten artefact scatters and seventeen Low Density Artefact Distributions (LDADs).

Two Cultural Heritage Management Plans (CHMPs) are being prepared under section 189 of the *Aboriginal Heritage Act 2006* (Vic). The CHMPs will include management conditions that will reduce the project's impact on both intangible and tangible Aboriginal cultural heritage values. If approved, the CHMPs will be implemented through the construction and operation phases of the project.

cultural values assessments are being prepared with GLaWAC, BLCAC and BLSC covering terrestrial and marine landscapes. The outcomes of the CVA process will be incorporated into the two CHMPs being prepared for the project.

The non-Indigenous cultural heritage assessment and archaeological survey identified a single non-Indigenous cultural heritage site, a brick cistern. The brick cistern is located outside the construction area, however, is within 50 m of the edge of the construction area and access road. Through the implementation of measures incorporated into a HHMP, the project is not expected to impact the brick cistern.

The project will protect, avoid and where avoidance is not possible, minimise adverse effects on tangible and intangible Aboriginal cultural heritage values through the implementation of the CHMPs.

## Marine

The underwater cultural heritage assessment did not identify any maritime or Aboriginal cultural heritage artefacts in the Victorian nearshore section of the study area. A review of historical records identified six shipwrecks that could be in the nearshore Victorian section. The geophysical and dive surveys did not identify any shipwrecks, dumping sites or vessel discards, however their presence cannot be entirely discounted due to inherent uncertainties in the geophysical data.

The assessment identified seven geophysical anomalies in the Victorian nearshore section of the study area. None of the anomalies have been visually inspected, and as they are beyond the AoD, the cable laying activities are not expected impact these anomalies.

Predictive modelling was completed to assess submerged cultural landscapes and their potential to hold Aboriginal cultural heritage artefacts. Geophysical data identified a beach ridge strandplain approximately 3 km from the Victorian shoreline, at 17 to 22 m water depth. Project activities are expected to avoid this landform due to its rocky makeup, so impacts to Aboriginal cultural heritage artefacts in the Victorian section of the study area are highly unlikely.

No examples of Aboriginal cultural heritage artefacts were identified in the beach ridge strandplain. However, their presence, while unlikely, cannot be discounted. MLPL will engage relevant First Peoples groups to minimise potential impacts to cultural heritage values. The management plan for underwater cultural heritage will detail measures to avoid and minimise impacts on underwater cultural heritage and archaeology.

### 1.2.4 Agriculture, land use and socioeconomic

EES evaluation objective 4 – *Avoid and, where avoidance is not possible, minimise adverse effects on agriculture, forestry and other land uses, social fabric of communities, and local infrastructure, businesses and tourism.*

The EIS/EES chapters relevant to this evaluation objective include:

- Volume 1, Chapter 7 – Economics
- Volume 4, Chapter 6 – Agriculture and forestry



- Volume 4, Chapter 15 – Land use and planning
- Volume 4, Chapter 16 – Social

The project alignment extends approximately 90 km from the shore crossing at Waratah Bay to the converter station at Hazelwood, crossing the municipal areas of the South Gippsland Shire and City of Latrobe. The primary land uses comprise of agriculture, forestry plantations, conservation, rural living and tourism. Community members value all aspects of community identity, in particular existing amenity, landscapes, sense of place and coastal lifestyle of the region.

Construction activities may lead to temporarily changes to visual amenity, changes to the road network, impair access to recreational areas and lead to general amenity from changes to the noise environment and dust generation. The landscape and visual assessment found several recreation areas are sensitive to potential project impacts, including the beaches at Sandy Point and Waratah Bay, the Great Southern Rail Trail and Grand Ridge Rail Trail and Mirboo North State Forest. The noise and vibration and air quality assessments found changes to amenity from noise and dust generation will be short duration and intermittent in nature, and impacts will be managed through the implementation of measures to comply with EPRs.

The SIA found the project is expected to benefit local communities through employment and training opportunities, particularly benefiting females, youth, First Peoples, and vulnerable groups. MLPL will implement a workforce and accommodation strategy to address the availability and affordability of housing. Collaborative efforts between government and industry are needed to manage accommodation for the regional workforce and mitigate the cumulative impact on rental housing. Local businesses within the region are expected to benefit from an increase in demand for goods and services arising from construction activities.

The primary industries in the study area comprise of agriculture, forestry and fishing. Agriculture (mainly beef, dairy and horticulture) contributes over \$2 billion to the southern Gippsland region each year. The economic assessment found in regard to agricultural impacts, the beef, dairying and forestry will be most impacted by the AoD of the project. During consultation completed for the agriculture assessment and SIA, agricultural landholders raised concerns regarding reduced productivity or yields from land during the construction and operational phases, and breach of biosecurity controls. Prior to construction, MLPL will complete property condition surveys to understand direct and indirect impacts to each impact priority. Property management plans will be prepared for each property to detail specific measures to minimise disruption to farm or forestry infrastructure, including measures to minimise disruption to agricultural and forestry operations and manage biosecurity risks.

Land occupied for construction will be leased from landholders. Impacts during construction will largely be temporary where areas are reinstated, and prior land use is able to recommence. However, the project will permanently restrict plantation harvesting practices within the easement and remove wood stock from forestry resources through clearing of trees for the project, leading to the direct loss of land available to forestry. Farm development plans will also be constrained by the restrictions that will apply within the cable easement. Landholders will be compensated for occupation during construction through lease agreement

payments or compensation payments. While landholders will be compensated for losses due to the easement restrictions through acquisition of the easement.

There are extensive fishing grounds in Bass Strait, with fishing activities comprising of Commonwealth, Victorian and Tasmanian State managed commercial fisheries. The 1.5 km long by 1 km wide exclusion zone surrounding the cable lay vessel during the placement and burial of the subsea cable lay vessel will temporarily disrupt commercial fisheries. MLPL will notify relevant maritime organisations of the timing of the construction and maintenance activities to minimise the disruption to maritime users. The marine resource assessment found due to the size of the fishing grounds and temporary nature of the maritime construction activities; project activities are not expected to impact commercial fishing activities.

Economic modelling found the project is expected to add a total of \$1.4 billion and 2,244 FTE jobs to the economy of Victoria over the five-year construction period. Comparatively, the project is expected to add a total of a total of \$681 million and 1,337 FTE jobs to the economy of Tasmania, over the same period. A combined total of \$1.7 billion gross economic product is modelled to be added to Victorian and Tasmanian economies during project operation.

The land use and planning assessment found the project is broadly consistent with existing land use policy within the region, including policy support for the timely provision of energy distribution infrastructure to meet increasing demand for energy services. The operation of the project will result in impacts to land use where above ground project infrastructure will be operated, however, the ongoing and maintenance of the project not anticipated to have long-term residual impacts due to the majority of infrastructure being located underground.

No other significant changes to existing land use are anticipated from the construction and operation of the project, although there will be some restriction on land uses with the easement proposed to protect project infrastructure, for which landholders will be compensated through easement acquisition. With the implementation of measures to comply with EPRs the project will not impair or contradict the operation of the wider planning scheme or other existing land uses.

Changes to local transport access and potential increased noise from construction will be noticeable to visitors during the construction phase of the project and may. Despite the implementation of measures to comply with the EPRs, construction will cause short-term disruption to tourist accommodation where the attractiveness of these accommodation providers is decreased during construction in the immediate area. As construction activities are only for short periods in any one location along the project alignment, these short-term impacts are considered acceptable.

The project will avoid and, where avoidance is not possible, minimise adverse effects on agriculture, forestry and other land uses, social fabric of communities, and local infrastructure, businesses and tourism.

## 1.2.5 Amenity, health, safety and transport

EES evaluation objective 5 – *Avoid and, where avoidance is not possible, minimise adverse effects on community amenity, health and safety, with regard to noise, vibration, air quality including dust, the transport network, greenhouse gas emissions, fire risk and electromagnetic fields.*

The EIS/EES chapters relevant to this evaluation objective include:

- Volume 1, Chapter 9 – Sustainability, climate change and greenhouse gas emissions
- Volume 1, Chapter 10 – Electromagnetic fields
- Volume 4, Chapter 8 – Traffic and transport
- Volume 4, Chapter 9 – Air quality
- Volume 4, Chapter 10 – Noise and vibration
- Volume 4, Chapter 12 – Bushfire

The project will result in short term, temporary changes to road conditions, traffic volumes and flows. The project will involve temporary modifications to the road network which may temporarily impact road uses and residents in the area. The traffic and transport assessment found ten intersections will require upgrades to accommodate peak traffic levels if they are on the selected routes for construction vehicles. Modelling was completed for expected traffic conditions during the construction phase of the project. The results of modelling found there will be an increase in traffic on the local road network and on roads connecting to the access tracks, however this increase will not exceed their operating capacity during construction phase. The most significant impact associated with the project is the movement of the transformer transporter vehicle, classed as an oversized and over mass load. The movement of the transformer transporter along the preferred path may impact safety and traffic delays, as well as minor road modifications. A traffic management plan will be developed and implemented in accordance with DTP and local requirements to monitor potential traffic-related impacts.

The noise and vibration assessment found the key noise generating activities associated with the project include construction activities for the cable route, shore and local feature crossings with HDD, and vehicle movements. Most construction activities will take place during normal working hours, with the exception of HDD for the Waratah Bay shore crossing and Morwell River crossing. A construction noise and vibration management plan will be developed and implemented to adhere with EPA Victoria *Publication 1834 Civil construction, building and demolition guide and supplementary guidance* during normal working hours (Monday to Friday 0700 to 1800 hrs and Saturday 0700 to 1300 hrs, excluding public holidays), and where unavoidable works are expected to take place outside of normal working hours. The loss of amenity anticipated from project activities is low due to the transient and short-term nature of construction activities and the distance of construction works from residential homes. Following the implementation of measures to comply with EPRs, the generation of noise emissions at the shore crossing over an extended period may impact noise sensitive areas and natural areas valued for their soundscapes.

Prior to construction, additional background noise monitoring will be completed at key project sites, including the shore crossing, construction locations where unavoidable works outside of normal working hours could occur for five or more days and the converter stations site, to characterise existing noise levels and model predicted noise levels generated by construction works. Detailed noise and vibration impact assessments will be completed at specific sites where noise generating work that could impact sensitive receivers. The design process for the converter station must include a systematic evaluation of noise control options to minimise the risk of harm from operation noise so far as reasonably practicable. The final converter station design is not expected to exceed background noise levels at sensitive receivers, following the implementation of measures to comply with EPRs.

The air quality assessment identified construction and upgrades of roads, excavation, trenching and vegetation clearance, stockpiling of topsoil and HDD at Waratah Bay shore crossing as the key activities associated with dust generation. Landholders are expected to experience minimal dust impacts. Residents may notice more a gradual increase in buildup on surface, however, these impacts will be short term in nature, while construction is occurring in proximity to their residence. Most nearby residents are unlikely to notice a significant difference as compared to normal dust buildup. A construction dust management plan will be developed and implemented in accordance with EPA Victoria requirements and guidelines with measures to manage and suppress dust emissions. Through the implementation of standard dust management measures to comply with the air quality EPRs the project will not result in significant or measurable impacts on the health of the community.

The bushfire assessment found there have been no historic bushfire events recorded in the Waratah Bay or Hazelwood project sites, although there have been fires recorded within and beyond the broader study area. A construction environmental management plan will document measures to be implemented in construction to avoid the ignition of fires during construction and operation. A bushfire emergency management plan will also be prepared for the project construction.

Modelling of the EMF generation associated with the operation of the project demonstrated the project is expected to generate EMF levels below all applicable reference levels, including *International Commission on Non-Ionising Radiation Protection guidelines* for all human and ecological values, with the exception of beehives. EMF emissions generated by the project has the potential influence bee behaviour, although no beekeeping sites are known within 5 m of the proposed cable route, however if identified, beehives will be relocated. The EMF assessment found EMF is not expected to impact the accuracy of some navigation systems of commercial and recreational boats, however the magnetic field generated by the energised HVDC cable may interfere with accuracy of magnetic compass readings used on smaller recreational vessels if the magnetic compass is located within 10 m of the subsea cable. Large commercial vessels use gyrocompasses that sense the axis of the earth rather than its magnetic field and so are unaffected. Overall, the project is not expected to impact community amenity, health and safety with regard to electromagnetic fields.

The project is expected to generate 53,015 tonnes of carbon dioxide equivalent (tCO<sub>2-e</sub>) in Scope 1 and 2 emissions during the construction period, including land clearing, while Scope 3 emissions including concrete and steel for construction, are estimated to be 162,926 tCO<sub>2-e</sub>. For construction, key activities associated

with emissions generation include fuel consumption, land clearing and embodied energy in materials used in construction. The operational phase of the project is estimated to generate 235,128 tCO<sub>2-e</sub>/y, key activities associated with operation include transmission loss and electricity consumption for lighting and security of infrastructure. The GHG assessment found that the project is expected to contribute no more than 0.05% of Australia's emissions on an annual basis during operational period. The project is expected to support a reduction of 140 million tCO<sub>2-e</sub> by 2050 through unlocking renewable energy generation opportunities and cost-effective energy storage. The emissions generated by the project are not expected to impact community amenity, health and safety.

The project will avoid and, where avoidance is not possible, minimise adverse effects on community amenity, health and safety, with regard to noise, vibration, air quality, transport network, fire risk and electromagnetic fields through the implementation of measures to comply with EPRs.

## 1.2.6 Landscape and visual

EES evaluation objective 6 - *Avoid and, where avoidance is not possible, minimise potential adverse effects on landscape and visual amenity.*

The EIS/EES chapters relevant to this evaluation objective include:

- Volume 4, Chapter 7 – Landscape and visual
- Volume 4, Chapter 16 – Social

SIA consultation found the community highly values the landscape and visual amenity of agricultural areas, conservation reserves, national bushlands and beaches. The landscape and visual assessment found changes to visual amenity associated with the construction of the project will be short-term and temporary in nature, as the construction works move along the land cable route. The highest visual impact is associated with viewpoints that overlook Waratah Bay transition station, laydown area off Strzelecki Highway and the Hazelwood converter station, and construction visible from the Grand Rail Trail, due to the scenic value of this location. During the operation, the majority of project infrastructure will be underground and avoid any landscape and visual amenity impacts. The transition station will be visible from key viewpoints, however, will not be the dominant feature in the landscape due to vegetation coverage, topography and distance from key vantage points.

The changes to visual amenity are reduced by most of the project being underground, and the route selection which has avoided townships and residentially zoned land and minimising distances where the project will run parallel to major roads, highways, and tourist routes. The impacts of visual amenity generated by above ground project infrastructure will be minimised by vegetation screening and the use of sympathetic design elements.

Overall, the project will avoid and, where avoidance is not possible, minimise potential adverse effects on landscape and visual amenity through the implementation of measures to comply with EPRs.

## 1.3 Environmental Management Framework

The Environmental Management Framework presented in this EIS/EES has been developed for the project to provide a transparent governance framework for the management of environmental impacts from the project and confirm compliance with project approvals. It outlines how MLPL and its contractors will meet Commonwealth and state environmental statutory requirements to comply with project approvals, achieve necessary environmental outcomes, protect environmental values and sustain stakeholder confidence. The Environmental Management Framework is provided in Volume 5, Chapter 2 – Environmental Management Framework.

Section 6 of the EIS guidelines requires that information on proposed EPRs and any identified recommended measures be prepared as a consolidated set of EPRs and mitigation measures. The Environmental Management Framework is required to describe the proposed environmental measures to be achieved, the proposed safeguards and mitigations to address relevant impacts, the expected effectiveness of mitigation measure and an evaluation of whether any residual impacts are consistent with acceptable levels of impact.

Section 3.7 of the EES scoping requirements requires that an Environmental Management Framework should describe a transparent framework that details clear accountabilities for complying with approvals as well as managing anticipated environmental risks and impacts over the design, construction, operation and decommissioning stages of the project.

The Environmental Management Framework includes EPRs developed by each technical study prepared for the EIS/EES. EPRs specify the environmental outcomes that must be achieved during the construction, operation, and decommissioning of the project without specifying how outcomes are to be achieved. This approach gives MLPL and appointed contractors flexibility to be innovative and refine the alignment in consultation with landholders' during the detailed design phase, while ensuring that impacts are managed to acceptable levels and comply the projects approvals.

Volume 5, Chapter 2 – Environmental Management Framework outlines the process for managing changes to environmental management documentation and project alignment or construction methods. It also outlines the requirements for monitoring, reporting, and auditing by MLPL and its contractors.

Decommissioning will be planned and carried out in accordance with regulatory and landholder requirements at the time. Decommissioning plans for onshore and offshore infrastructure will be prepared in accordance with approvals conditions prior to planned end of service and decommissioning of the project. The decommissioning plans will outline how activities will be undertaken and potential impacts managed as outlined in EPRs EM05 and EM06 included in the Environmental Management Framework for the project.

Subject to the outcome of the Minister for Planning's assessment of the EIS/EES and receipt of project approval, the Marinus Link Incorporated document will require the preparation of an Environmental Management Framework and EPRs that are approved by the Minister for Planning. The Environmental Management Framework and EPRs presented in this EIS/EES will be updated to address the Ministers Assessment of the EIS/EES.

The project will be constructed over two stages by a number of contractors who will work collaboratively with MLPL, landholders and First Peoples to deliver the project. MLPL will develop a Compliance Management Standard to outline the responsibilities of each contractor performing construction works (including temporary works) to comply with all requirements of the Environmental Management Framework, relevant legislation, and statutory approvals. MLPL will be responsible for monitoring compliance of contractors, supported by an Independent Environmental Auditor (IEA) during construction.

## 1.4 Conclusion

As coal-fired power generation decreases, the need for 'on-demand' electricity and the ability to store energy for long periods becomes essential to maintaining the reliable, cost-efficient power supply Australian communities rely on. The project is a critical part of Australia's transition from a national electricity system that is dependent on fossil fuels to a low emissions power system. It will enable the flow of electricity in both directions between Victoria and Tasmania, delivering reliable clean energy for customers in the NEM. It will enable excess low-cost, clean energy to be available when demand across the NEM outstrips supply, increasing reliability of power supply during periods of high demand for individuals, businesses and communities across Australia. While a transmission cable of this scale has not been built in Australia previously, the type of project infrastructure and proposed construction methodology is not new as the Basslink transmission cable from Tasmania to Victoria has been operational for almost 18 years.

The project is proposed to be delivered in two stages, each being one 750 MW HVDC circuit between Tasmania and Victoria. Referred to as stage 1 and stage 2, each represents the construction of one complete 750 MW circuit including the cable and converter station. Volume 1, Chapter 6 – Project description details a feasible way that the project could be delivered and is the basis of the impact assessment. The final design and construction method may differ from this project description as the detailed design is developed by the preferred contractors to comply with the EPRs and approval conditions.

The project alignment and construction methods have been selected to minimise impacts during construction and operation. The majority of impacts to the environment, heritage and socioeconomic values will occur in construction and along the project alignment. The impacts will be managed through the implementation of mitigation measures to comply with the EPRs developed through the technical studies. The EPRs have considered the values that could be impacted, standard measures and best practice requirements as well as requirements of legislation, policy and guidelines.

Operation of the project is expected to cause minimal impacts on the surrounding environment and community as most of the project infrastructure is underground within the terrestrial and marine environment. There will be some restrictions to existing agricultural and forestry land uses in the easement to protect the project infrastructure on shore. There will be no restrictions to fishing and maritime activities. Operation of the project is anticipated to have a positive economic effect over its anticipated 40-year life.

The Environment Management Framework has been developed to provide a governance framework for the management of environmental impacts that arise from the construction, operation and decommissioning of

the project. The Environment Management Framework and the associated EPRs are a suitable approach to managing the environment outcomes for this project and delivering the project benefits.

## 1.5 Next steps

The EIS/EES with draft PSA will be on public exhibition for 30 business days so that the community can view the documents and make written submissions.

Written submissions on the EIS/EES will be received by Planning Panels Victoria via the Engage Victoria website. Submissions will be received on matters relevant to both the EE Act and EPBC Act.

During the public exhibition period any interested party may make a written submission on the EES and EIS. MLPL will then review submissions and prepare a response to issues raised.

### **Inquiry and Advisory Committee process**

At the end of exhibition, the Minister for Planning is expected to appoint an EES Inquiry and Advisory Committee (IAC) to evaluate the effects of the project. The IAC would have regard to the EIS/EES, the proposed planning scheme amendment and all written submissions received.

The Inquiry may take one of three forms: a desktop review of written submissions, a conference of submitters and a review of submissions, or a formal hearing where the proponent and submitters can speak and present expert witnesses. Given the scale of the project, it is expected the Inquiry would be a formal hearing.

The duration of a formal hearing will be dependent on the number of submissions received and the requested to present to the IAC. The duration of the hearing will be determined by the IAC. After the completion of the hearings, the IAC will submit a report to the Minister for Planning for consideration.

### **Assessment under the EPBC Act**

Following conclusion of the exhibition period, MLPL will review submissions and provide a supplementary document to DCCEEW to outline the nature of the comments and actions take to address them.

Following receipt of the supplementary document, the Commonwealth Minister for the Environment and Water will determine whether to approve the project and define conditions of approval under the EPBC Act.

### **Victorian Minister for Planning's Assessment**

The Victorian Minister for Planning will issue a written assessment of the project's environmental effects under the EE Act by issuing an assessment report. The Minister's Assessment will consider the EIS/EES documents, public submissions, the proponent's response and the IAC report.

The Minister's Assessment may conclude that the project:

- ✓ Will have an acceptable level of environmental effects, or
- ✓ Will have an unacceptable level of environmental effects, or



- Will need major modifications and/or further investigations to establish that acceptable outcomes will be achieved.

If the Minister's Assessment concludes that the project's impacts will be acceptable, MLPL will then seek to obtain the necessary statutory approvals required for the project in Victoria, as outlined in Volume 1, Chapter 4 – Legislative framework.

Following receipt of the Minister's Assessment MLPL would address the recommendations provided by the Minister. As part of this process, MLPL will consider any recommendations and directions that form part of the Minister's Assessment and make any necessary updates to further planning and environmental approvals documentation, such as the PSA. MLPL will then request that the Minister for Planning prepare, adopt and approve the PSA and also request that no further public notice and consultation will be required given the exhibition, consideration and opportunity for public comment afforded by activities undertaken by MLPL in preparing the EIS/EES.