ENVIRONMENTAL IMPACT STATEMENT/ ENVIRONMENT EFFECTS STATEMENT

Summary Report

May 2024

MARINUS LINK

Disclaimer

This document has been prepared by Tetra Tech Coffey Pty Ltd on behalf of Marinus Link Pty Ltd for Marinus Link, for the purposes of preparing the environment effects statement/ environmental impact statement. It is not intended to be used for, and should not be relied on, for any other purpose. Tetra Tech Coffey Pty Ltd accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this document by any third party. This document is based on the information available, and the assumptions made, as at the date of the document. This document is to be read in full. No excerpts are to be taken as representative of the findings without appropriate context. Unauthorised use of this document in any form is prohibited.

Responsibilities

This document is the responsibility of the Marinus Link Team, Marinus Link Pty Ltd PO Box 606 Moonah Tasmania 7009, ABN 47 630 194 562 (hereafter referred to as "Marinus Link").

Enquiries regarding this document should be addressed to:

Caroline Wykamp
CEO Marinus Link
PO Box 606
Moonah TAS 7009
Email: team@marinuslink.com.au

Contents

1. Introduction

Marinus Link (the project) is a proposed electricity interconnector that will link Tasmanian renewable energy resources and the National Electricity Market (NEM) via connection in Victoria. It will enable energy trade from a diverse range of generation sources in Tasmania to where it is most needed in Victoria, South Australia, New South Wales and Queensland via the NEM. It will enable the flow of electricity in both directions, delivering low-cost, reliable and clean energy for customers in the NEM. As a result, the capacity and security of energy will increase across the NEM.

Because of the important role the project will play in delivering affordable, reliable renewable energy to cities, towns and regional communities, it has been it has been recognised a project of national significance.

The purpose of this document is to provide an overview of the project and a summary of the environmental impact statement and environmental effects statement (EIS/EES). The EIS/EES describes the existing environment and identifies the benefits and potential impacts during construction, operation and decommissioning, and proposes ways to avoid, minimise, offset or manage impacts.

This summary includes:

- **Overview of why the project is needed and its benefits**
- **About the project and how it has been developed**
- **Consultation with the community and First Peoples**
- **Planning and approval requirements**
- **EIS/EES overview including guidelines and scoping requirements**
- **Information on how to make a submission on the EIS/EES**
- **Details of the technical studies undertaken for the project**
- **Summary of findings from the technical studies**
- **Overview of the approach to impact management**
- **The next steps and where to find more information.**

2. Why is Marinus Link needed?

Australia is undergoing a rapid transformation, transitioning from coal and gas-fired energy generation to renewable energy. Australia's eastern and south eastern states operate as an integrated NEM, with five regions (Victoria, Tasmania, Queensland, New South Wales including the Australian Capital Territory, and South Australia) able to trade electricity across boundaries, depending on available supply and demand.

As more renewable energy projects are developed, significant investments in generation, storage and transmission and system services are required to facilitate the transition (AEMO 2022). On-demand, long-term storage and transmission services will enable energy generated by renewables to be stored over longer periods so it can be dispatched during periods of peak demand.

The project provides the infrastructure to unlock Tasmania's renewable energy and energy storage capacity to support the NEM transition, while delivering power system security, reliability, and affordability. The key benefits of the project are described in further detail below.

2.1 Energy transition – Marinus Link unlocks the ability to store and move energy

The project provides the additional trading capacity between Tasmania and mainland Australia to support the transition of the NEM to a lower emissions system, while maintaining a secure and stable power system. The additional transmission capacity allows for higher amounts of renewable energy in the NEM, while providing firming capacity (i.e., 'deep storage') to replace the current stabilising function of coal fired generation. These benefits support a low emission energy future and the Commonwealth Government's reduction target of net zero by 2050 (Albanese A, Bowen C 2022).

A range of different storage types are required to complement variable renewable energy developments to manage the daily, weekly and seasonal balance of energy availability, and energy consumption (AEMO 2022). Pumped hydro storage provides the large-scale and longer duration storage required to absorb excess generation within the system when available, and store this energy and dispatch it in peak times or when renewable energy generation may be lower. AEMO acknowledges the important contribution of this storage in managing seasonal and long duration variations in renewable resource availability, particularly as the ability of coal to provide these services diminishes (AEMO 2019).

Energy trading between Tasmania and the NEM is currently made possible by Basslink, an approximately 600 megawatt (MW) high-voltage direct current (HVDC) interconnector between George Town in Tasmania and Loy Yang in Victoria. Available capacity on Basslink is often highly utilised, restricting the amount of energy transmission between Tasmania and the NEM.

Further to the system stability and security offered by the additional transmission capacity, the transmission technologies proposed for the project are more controllable and capable of providing power system stability services beyond what is currently achievable from Basslink (TasNetworks 2019).

The project will substantially increase the capacity for energy trading between Tasmania and the NEM, allowing for the surplus renewable energy generation, above the current Basslink capacity, to be available to the NEM. The additional transmission capacity will also allow storage of surplus renewable energy from the mainland when available, and will dispatch the stored energy in times of high demand or low renewable energy output.

2.2 Improving Tasmania's energy security

Tasmania's energy security is challenged by issues arising from the reliance on a single interconnector across Bass Strait (Basslink). A second link that is geographically separate to Basslink will provide Tasmania with increased resilience in the event of a failure of Basslink. The additional trade capacity will also encourage additional renewable energy development and help meet Tasmania's total energy needs.

The project will enable the continued trading, transmission and distribution of electricity within the NEM. It will also reduce the risk of a single interconnector failure across Bass Strait and complement existing interconnector infrastructure within the wider NEM.

The project is expected to enable the development of further renewable energy generation projects in Tasmania, offering additional energy security to Tasmania and the NEM. It is estimated that the project could support approximately 33,700 MW of additional installed generation capacity sourced from wind and pumped hydro in Tasmania.

2.3 Energy cost reduction - putting downward pressure on prices

Tasmania has significant renewable energy generation potential, which outweighs current demand within Tasmania. The Tasmanian Government has also legislated a target to double renewable energy generation in Tasmania by 2040 (Rockliff J, Barnett G 2020).

Not only are Tasmania's renewable energy and storage capacity resources abundant, but they are also cost-competitive when compared to similar developments on mainland Australia. The Marinus Link Business Case Assessment Report (TasNetworks undated) highlighted that Tasmanian pumped hydro energy storage has a 30% lower capital cost ($1.3 million MW compared to $1.8 million/MW), and a storage duration typically four times longer than modelled mainland Australia projects. It also identified that, while capital costs are comparable, Tasmanian wind generation has a 25% higher energy output when compared to mainland Australia.

The project contributes to energy cost reduction in the NEM by:

- Reducing the capital cost of future generation, energy storage and transmission by using existing infrastructure to its' full potential (i.e., Tasmanian wind and hydro generation).
- Increased development and availability of relatively low-cost renewable energy capacity.
- Reducing reliance on expensive gas generation to provide dispatchable energy.

2.4 Jobs and economic benefits

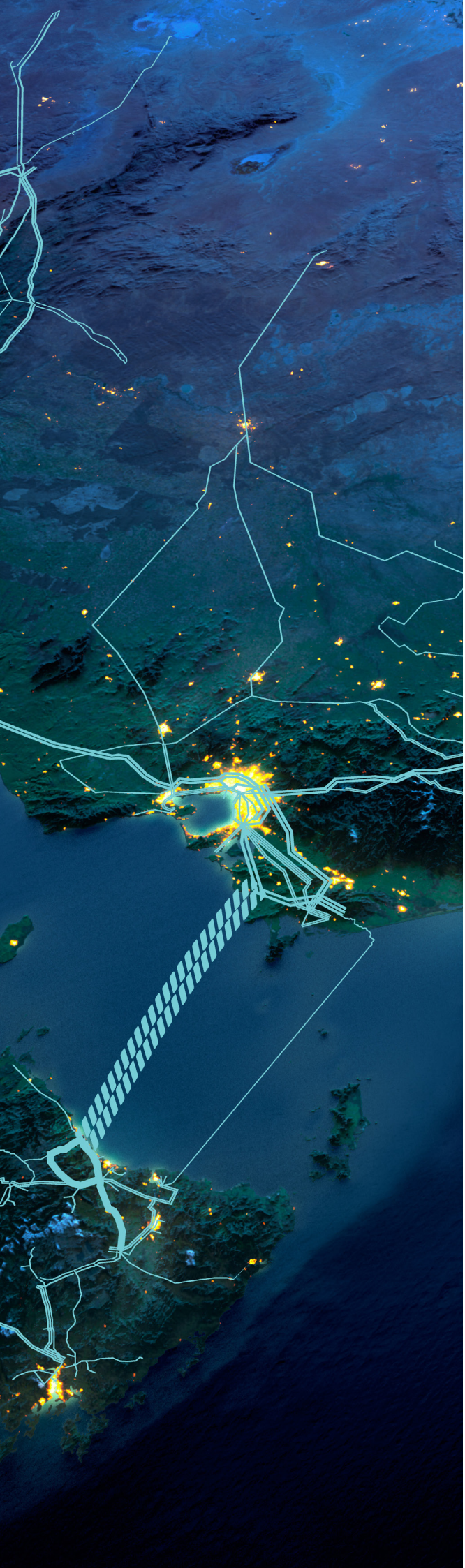
The construction and operation of the project will provide an estimated $1.47 billion in economic contribution for Tasmania and $1.78 billion in economic contribution for Victoria (Ernst & Young 2023). The project is also predicted to support the following jobs during peak construction:

- Stage 1: 673 jobs per year in Tasmania and 857 jobs per year in Victoria.
- Stage 2: 643 jobs per year in Tasmania and 818 jobs per year in Victoria.

The construction and operation of the project and associated network requirements, coupled with new investment, is expected to support jobs across a wide range of industries, education levels and occupations. To view the Ernst & Young Economic Contribution report, visit marinuslink.com.au/economic-contribution-2023.

2.5 Telecommunications capacity

The project will also provide additional telecommunications capacity through the delivery of construction of a fibre optic cable, which will be bundled with the interconnector. The telecommunications cable is expected to increase Tasmania's current optical fibre capacity by 150 times.



3. About the project

The project is a proposed 1500 MW HVDC electricity interconnector between Heybridge in northwest Tasmania and Hazelwood in the Latrobe Valley in Victoria. The project includes approximately 255 km of subsea cable in Bass Strait and 90 km of underground cable running through South Gippsland to Hazelwood. The project will make landfall at Waratah Bay in Victoria, and Heybridge in Tasmania. A communications building, and possibly a transition station, will also be required approximately 1 km from the Victorian shore crossing.

At both Heybridge and Hazelwood, a converter station will be constructed to enable Marinus Link to connect into the electricity grids in Tasmania and Victoria.

The project will be implemented as two 750 MW stages. Each stage will comprise two power cables and a fibre optic communications cable.

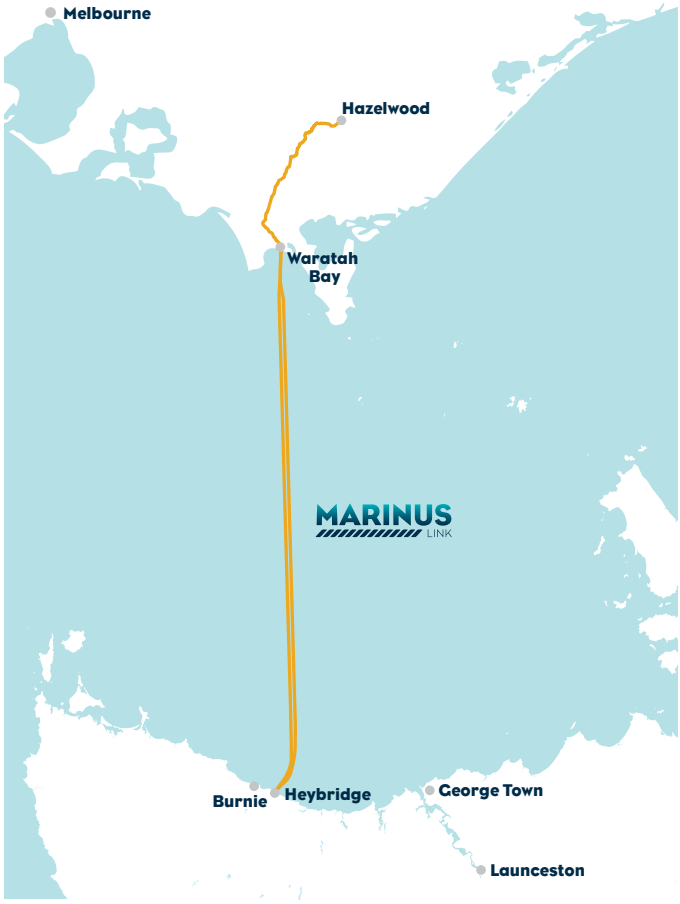


Figure 1 provides an overview of the project.

3.1 Developing Marinus Link

Selecting the cable alignment considered the environmental and social context of three areas: Tasmania, Bass Strait and Victoria. This process was supported by desktop ecological, cultural heritage and geotechnical studies, and ground-truthing surveys. This process identified the constraints and opportunities associated with the existing environment. First Peoples were consulted early in the route selection process and provided valuable input on the local landscape.

The identified constraints and opportunities, along with the technical specifications and objectives of the project, were the basis for developing the route and site selection criteria (detailed in Volume 1, Chater 3 – Route selection and project alternatives). Potential landfalls, shore crossings, corridors, routes and converter station site locations were evaluated against these criteria. Information from the technical analysis confirmed that the preferred route was Burnie to Hazelwood, with landfalls at Heybridge (Tasmania) and Waratah Bay (Victoria). This was identified as the least constrained route that met the project objectives. Further refinement of the route over 2021 and 2022 has led to the proposed route, which is the subject of this EIS/EES, running from Heybridge, Tasmania to Hazelwood, Victoria.

The project will extend from a converter station which is proposed to be located at Heybridge, Tasmania, near Burnie. The converter station will facilitate connection of the project to the North West Tasmania transmission network.

Approximately 255 km of subsea HVDC cables will be laid across Bass Strait. The subsea cable route was refined at the Tasmanian and Victorian coasts to avoid seabed features such as low-profile reefs and seamounts, and sponge beds in deeper waters.

The proposed connection point at the subsea shore crossing in Victoria, is located at Waratah Bay, with the route crossing the Waratah Bay - Shallow Inlet Coastal Reserve. This location avoids the rocky platforms and patch reefs that extend east into the bay from Cape Liptrap and west into the bay from Wilsons Promontory National Park.

The land cable will extend underground for approximately 90 km to the converter station adjacent to the Hazelwood Terminal Station. The Victorian terrestrial route has been amended, where reasonable and feasible, to address the concerns of landholders. Further information from landholders about current, proposed and future farming activities and plans, continue to be shared and inform the route alignment. Route refinement on properties has sought to address landholder concerns, including potential impacts to farmfarming infrastructure, farming productivity and any proposed infrastructure.

4. Consulting with community and First Peoples

Marinus Link Pty Ltd (MLPL) recognises the importance of building trust and social licence among the community. MLPL have been raising awareness of the project since 2018, providing information and seeking feedback from the community, stakeholders and First Peoples, to inform the projects development. MLPL's approach to engagement requirements is guided by the four key pillars illustrated in Figure 2. This approach has also addressed the requirements for engagement for the EIS/EES.

The project's engagement program consisted of a combination of face-to-face and online forums, supported by digital, print, and in-person communication. Community and stakeholder feedback has informed the proposed route design and construction method. Key changes include:

- Route alignment changes to accommodate future land use and farming operations of landholders.
- Screening of the converter station.
- Use of horizontal directional drilling (HDD) at sensitive locations, such as the shore crossing and waterways.

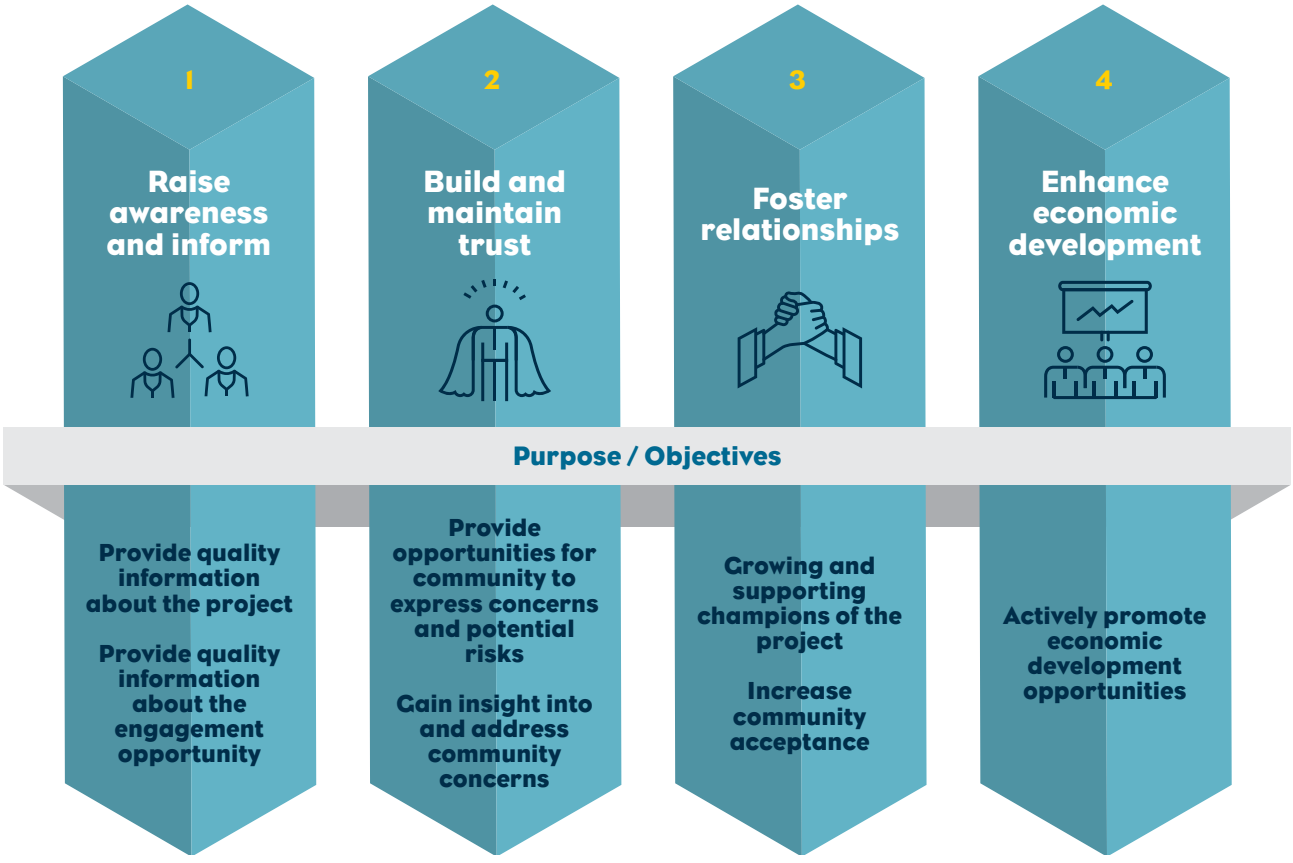


Figure 2 Communication and engagement pillars

4.1 Gippsland Stakeholder Liaison Group

MLPL established a Gippsland Stakeholder Liaison Group (GSLG) in late 2021 with representatives from a range of local organisations across economic development, education, environment and included GunaiKurnai Land and Waters Aboriginal Corporation (GLaWAC), who provide input into initiatives to maximise the benefits of the project. The GSLG meet regularly and provide a forum for communication and engagement between the MLPL and key stakeholders.

Engagement with the broader community and stakeholders has and will continue to inform the design and development of the project. MLPL recognises that issues may emerge over the life of the project and that engagement with stakeholders and the community will be a critical part of effectively identifying and managing issues.

4.2 Engaging with First Peoples

MLPL acknowledges and respects the First Peoples of the Country on which the project is proposed in Victoria, Bass Strait and Tasmania. MLPL has and will continue to engage with First Peoples in Victoria and the Tasmania Aboriginal Community throughout the project.

Early in the project, MLPL sought advice from First Peoples State Relations (FPSR) in Victoria regarding the First Peoples groups in the Gippsland region that may have an interest in the project area. FPSR identified Traditional Owners including the Boonwurrung Land and Sea Council (BLSC), Bunurong Land Council Aboriginal Corporation (BLCAC), and GLaWAC as likely interested parties.

Early engagement focused on building relationships with the interested parties. Given the extent of the project and possible land impacts, MLPL hired First Peoples Engagement Advisors to support this important engagement.

Marinus Link also established its First Peoples Advisory Group (FPAG) for the project.

Photo: GSLG route tour

4.2.1 First Peoples Advisory Group in Victoria

MLPL have established the FPAG to provide a forum for representatives of the BLSC Corporation, BLCAC and GLaWAC to discuss and contribute to the project. FPAG facilitates ongoing conversations between MLPL and First People in Gippsland to understand the project impacts and realise opportunities. First Peoples feedback through the FPAG has resulted in MLPL integrating commitments into project plans for First Peoples engagement and participation in project construction and operation.

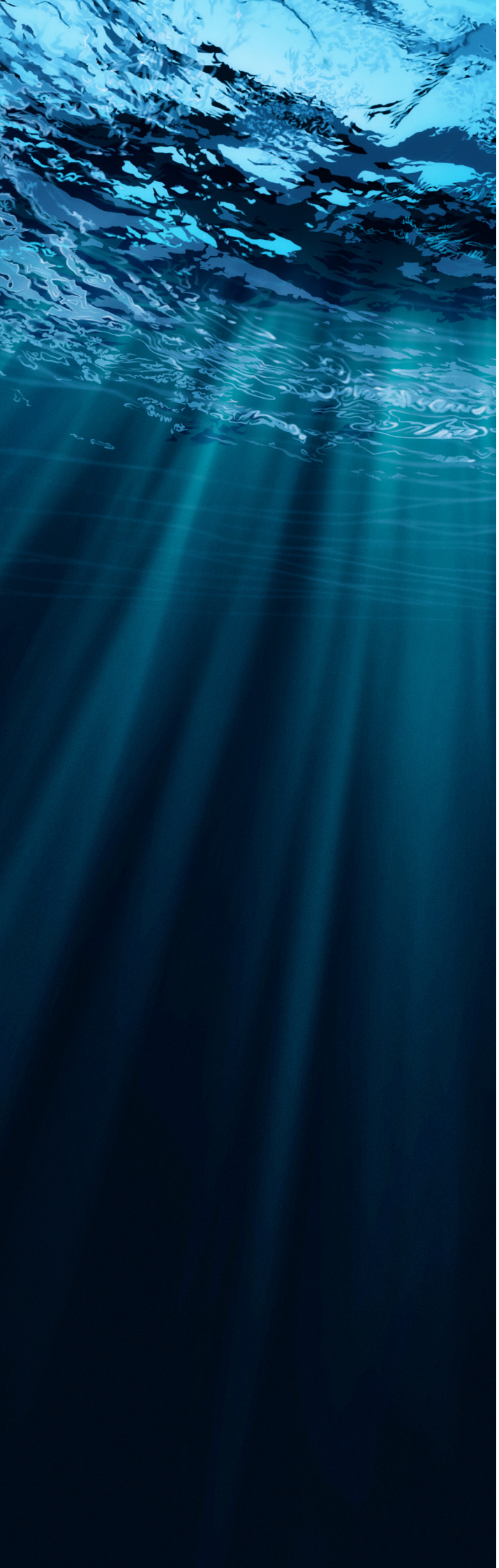
MLPL continues to connect with Traditional Owners in Victoria through their First Peoples Engagement Advisors and continues to plan and deliver learning and engagement opportunities for its people, including cultural education and training and an undertsanding of important cultural heritage requirements.

MLPL is progressing cultural values assessments in consultation with Traditional Owners in Victoria, which will inform the Cultural Heritage Management Plans (CHMPs) for the project. MLPL has also completed underwater cultural heritage and submerged landscapes assessments to support the EIS/EES.

4.2.2 Engaging with the Tasmanian Aboriginal Community

In Tasmania, MLPL has engaged with Aboriginal Heritage Tasmania, and commenced engagement with members of the Tasmanian Aboriginal Centre. MLPL has met with truwana Rangers and Community leaders, and is committed to further ongoing meaningful engagement in Tasmania.

Key stakeholders have advised that a state-wide and collaborative engagement approach is more appropriate for engagement in Tasmania. MLPL has subsequently discussed a collaborative approach engagement with related major projects and organisations (e.g. Renewables, Climate and Future Industries Tasmania, Hydro Tasmania, North West Transmission Developments (NWTD)) to plan coordinated engagement that is both culturally appropriate and addresses the needs of the Tasmanian Aboriginal Community.



5. Planning for Marinus Link

As the project has the potential to significantly impact on environmental and social values, detailed assessment of these potential impacts is required under ***the Environment Protection and Biodiversity Conservation Act 1999*** (Cwlth) (EPBC Act) and ***the Environment Effects Act 1978*** (Vic) (EE Act), through the preparation of this EIS/EES. Assessment is also required under ***the Environmental Management and Pollution Control Act 1994*** (Tas) (EMPCA) for the Tasmanian components of the project.

Relevant Commonwealth, Victorian and Tasmanian government agencies have produced guidelines to support the assessment of project impacts and to inform the project approval decisions. The EIS/EES provides for the assessment under Commonwealth and Victorian jurisdictions, with separate documentation prepared for the Tasmanian Government's assessment of the project.

5.1 Requirement for an EIS/EES

The project was referred to the Commonwealth Minister for the Environment on 5 October 2021. On 4 November 2021, a delegate of the Minister for the Environment determined that the proposed action is a controlled action, as it has the potential to have a significant impact on the environment and requires assessment and approval under the EPBC Act before it can proceed. The delegate determined that the appropriate level of assessment under the EPBC Act is an EIS.

On 12 December 2021, the former Victorian Minister for Planning determined that the project requires an EES under the EE Act, to assess the project's effects on the environment and to inform statutory decision making.

In July 2022, a delegate of the Director of the Tasmanian Environmental Protection Agency (EPA Tasmania) determined that the project be subject to environmental impact assessment by the Board of the EPA (the Board), under EMPCA.

As the project is proposed to be located within three jurisdictions, the Victorian Department of Transport and Planning (DTP), EPA Tasmania and Commonwealth Department of Climate Change, Energy, Environment and Water (DCCEEW) agreed to coordinate the administration and documentation of the three assessment processes. One EIS/EES is being prepared to address the requirements of DTP and DCCEEW. This EIS/EES, together with project information updates to be published following its finalisation and exhibition, will be made available on the project website (marinuslink.com.au).

5.2 The EIS/EES process

The EPBC Act and EE Act are the laws that govern the EIS and EES processes. The preparation of an EIS/EES is a rigorous and transparent process of assessment for proposed projects that could have a significant impact or effect on the environment.

DCCEEW published the '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)' (EIS guidelines). The Final EIS guidelines were provided on 18 October 2022, which describe the matters that are to be addressed in the draft EIS, as required under Section 101A of the EPBC Act.

The former Minister for Planning issued the 'Scoping Requirements Marinus Link Project Environment Effects Statement' (February 2023) (EES scoping requirements). The EIS guidelines and EES scoping requirements set out the specific matters to be assessed in the EIS/EES.

The EIS/EES identifies and assesses the potential environmental impacts of the project that could be caused during its construction, operation or decommissioning. In addressing the EIS guidelines and EES scoping requirements, 23 technical studies that assessed the project's potential impacts were commissioned. The technical studies for the EIS/EES assessed the significance of the project's potential impacts and informed the development of environmental performance requirements (EPRs). The EPRs will define the environmental outcomes to be achieved through construction, operation and decommissioning of the project The results of these technical studies are presented in the EIS/EES.

5.2.1 Technical reference group

DTP convened a technical reference group (TRG) for the purpose of providing expert advice throughout the EIS/EES process. The TRG comprises of representatives of relevant Victorian and Commonwealth government agencies, Registered Aboriginal Parties (RAPs), as well as the EPA Tasmania. The TRG is made up of members from:

- DCCEEW
- Department of Energy, Environment and Climate Action (DEECA)
- DTP
- EPA Victoria
- EPA Tasmania
- FPSR
- GLaWAC
- Heritage Victoria
- Latrobe City Council
- Transport Safety Victoria (formerly Maritime Safety Victoria) Regional Roads Victoria
- South Gippsland Shire Council
- Victorian Fisheries Authority (VFA)
- West Gippsland Catchment Management Authority (WGCMA)

Ongoing engagement with TRG members has also enabled the EIS/EES to address all relevant issues and any revised legislation, guidelines and policies.

5.2.2 EIS assessment guidelines

The EIS guidelines apply to the project in the Commonwealth marine area and in Victoria and Tasmania, with regards to matters of national environmental significance (MNES). The guidelines require that the level of analysis and detail in the EIS reflects the level of significance of potential environmental impacts.

The EIS must address:

- Physical disturbance of the sea bed and the underwater environment due to vessels, the disturbance of the terrestrial environment, impacts on underwater cultural heritage, impacts to users of the marine environment and other consequential and cumulative impacts due to the construction, operation and decommissioning of the project.
- Proposed EPRs, and any specific avoidance, management, and mitigation measures for impacts of the project on MNES.
- An environmental management framework that sets out the framework for management, mitigation, and monitoring of impacts including requirements for environmental auditing as it applies to the EPBC Act.
- An offset strategy to compensate for any the residual significant impacts of the project on MNES (where required) that meets the requirements in ***the EPBC Act 1999 Environmental Offsets Policy October 2012*** (EPBC Act Offset Policy).
- How First Peoples have been engaged through the assessment of the project against the EIS guidelines and a process of ongoing consultation through the life of the project.
- How consultation with affected parties and communities has been undertaken in relation to the proposed action.
- Assess compliance of the action with principles of ecological sustainable development as set out in the EPBC Act, and the objects of the Act.
- Details of the environmental record of the person proposing to take the action.
- Other requirements for approvals or conditions that apply or that the proponent reasonably believes are likely to apply to the proposed action.

5.2.3 EES scoping requirements

The EES scoping requirements include evaluation objectives outlining the desired outcomes to be achieved in the context of key legislative and statutory policies, as well as the principles and objectives of ecologically sustainable development, environment protection, net community benefit and healing Country.

The EES evaluation objectives include:

- **Biodiversity and ecological values** – 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.
- **Marine and catchment values** – Avoid, and where avoidance is not possible, minimise adverse effects on land and water (including groundwater, surface water, waterways, wetlands and the marine environment) quality, movement and availability.

- **Cultural heritage** – 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.
- **Agriculture, land use and socio economic** – Avoid, and where avoidance is not possible, minimise adverse effects on agriculture, forestry and other land uses, the social fabric of communities, local infrastructure, business and tourism.
- **Amenity, health, safety and transport** – 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.
- **Landscape and visual** – Avoid, and where avoidance is not possible, minimise potential adverse effects on the landscape and visual amenity.

5.2.4 Approach to impact assessment

Technical specialists completed 23 technical studies to address the EIS assessment guidelines and EES scoping requirements, and demonstrate how the EES evaluation objectives have been met. The technical studies applied a structured approach to impact assessments to ensure consistency between studies. Four different impact assessment methods were used, depending on the technical discipline. These methods are:

- significance assessment
- risk assessment
- compliance assessment
- industry specific methods

Each of these methods have the same key components, the main difference is how the impacts are assessed and evaluated. The key steps are:

- Assessing existing conditions and identifying relevant values.
- Identifying credible impact pathways – where project activities could result in an impact on the value.
- Assessing the potential impacts of activities undertaken for the project on the values.
- Where a need is identified to reduce impacts, developing EPRs that reduce the impacts.
- Assessing the residual impacts on values.

An important consideration for impact assessment is scale and context. The project is being assessed with the preparation of an EIS/EES because of its potential for significant effects to the environment, a state significant impact in Victoria, on matters protected by the EPBC Act. This is reflected in the impact assessment criteria developed for each technical study.

Technical studies completed for the following topics have informed the preparation of the EIS/EES:

1. Aboriginal and historical cultural heritage
2. Agriculture and forestry
3. Air quality
4. Benthic ecology
5. Bushfire
6. Climate change
7. Contaminated land and acid sulfate soils
8. Economics
9. Electromagnetic fields
10. Geomorphology and soils
11. Greenhouse gas emissions
12. Groundwater
13. Traffic and transport
14. Land use planning
15. Landscape and visual
16. Marine ecology and resource use
17. Noise and vibration
18. Surface water
19. Social
20. Terrestrial ecology
21. Underwater cultural heritage and archaeology
22. Heybridge social assessment (Tasmania)
23. Heybridge terrestrial ecology (Tasmania)

The EIS/EES considers impacts in the survey area under Commonwealth and Victorian legislation. The EIS/ESS includes consideration of impacts to the Tasmanian environment covered by commonwealth legislation. This includes MNES and matters considered by the Commonwealth Minister for the Environment and Water when making a decision under the EPBC Act only. The EIS/EES also covers matters protected by ***the Underwater Cultural Heritage Act 2018*** (Cwlth), such as shipwrecks in Tasmanian waters.

5.2.5 Environmental performance requirements

EPRs are a set of performance-based standards that have been developed to address the environmental risks and impacts assessed in the EIS/EES. These have been developed to avoid and minimise impacts to environmental values. The EPRs have been developed through preparation of the EIS/EES technical studies and informed by relevant legislation, policy and guidelines.

The EPRs will establish the environmental outcomes that must be achieved during the design, construction and operation of the project. The EPRs will facilitate the adoption of effective avoidance and mitigation measures to ensure the project is delivered and operated in accordance with the expectations of stakeholders and in accordance with the project approvals.

The performance-based approach promotes effective and site-specific design solutions and mitigation measures to be adopted during the design, construction and operation of the project.

The EPRs are an aspect of a broader Environmental Management Framework that provides a transparent governance framework for the management of environmental impacts from the project to meet state and commonwealth environmental statutory requirements, achieve necessary environmental outcomes, protect environmental values and sustain stakeholder confidence.

Compliance with the Environmental Management Framework and EPRs will also be monitored, evaluated and reported on by an Independent Environmental Auditor (IEA) and enforced through the contractual requirements for the delivery and operation of the project. Figure 3 provides an overview of the EIS/ESS overall assessment framework.

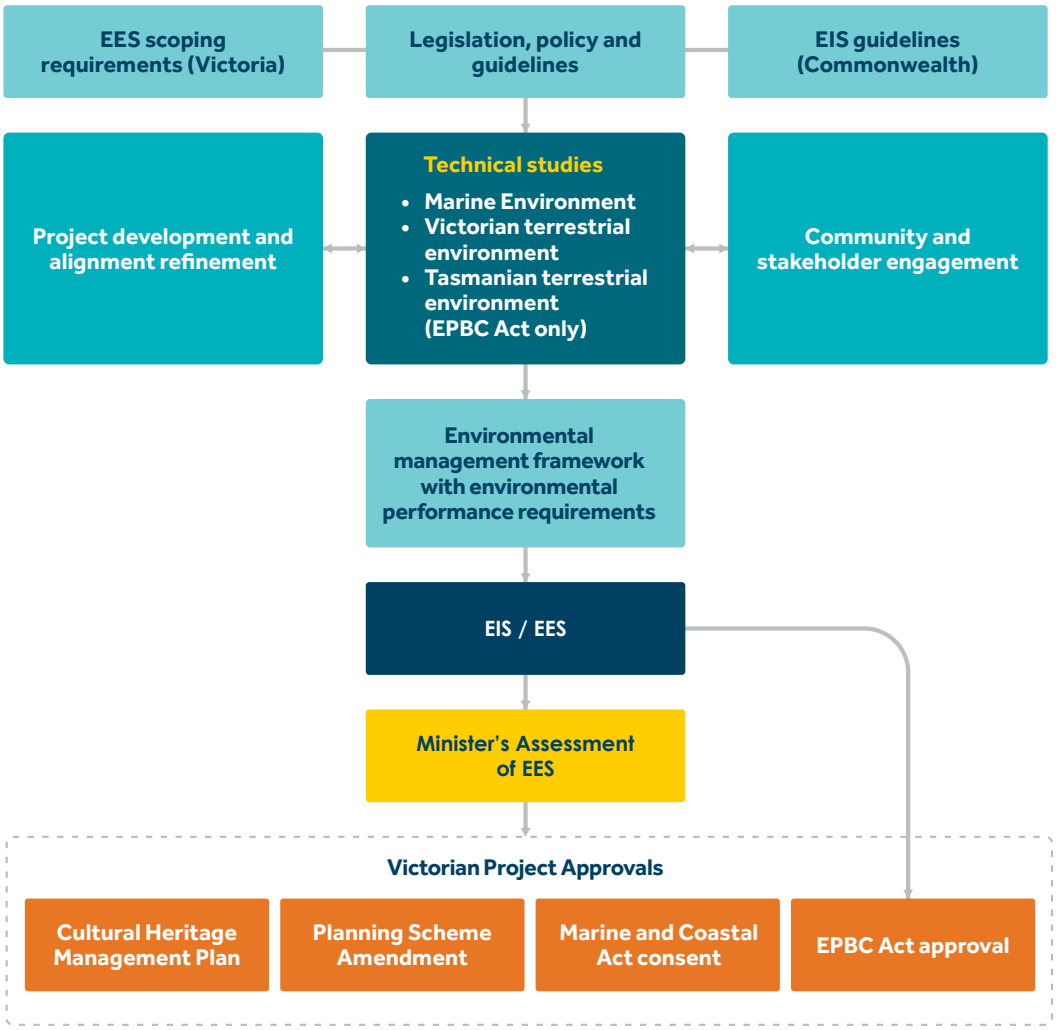


Figure 3 EIS/ESS overall assessment framework

5.3 Project approvals

The project requires approval under Commonwealth, Victorian and Tasmanian legislation. The scope of this EIS/EES is the Commonwealth and Victorian approvals, with Tasmanian requirements addressed in separate documentation. This section outlines the key legislation relevant to the projects environmental, land use planning, and heritage assessments and approvals, in Commonwealth and Victorian jurisdictions. Further description of the legislation relevant to project approvals is provided in the Volume 1, Chapter 4 – Legislative framework.

5.3.1 Commonwealth approvals

The EPBC Act applies to projects that may have a significant impact on MNES, such as the project. The EPBC Act is the legislation under which the Commonwealth Government will assess the project for the potential for significant impacts to the following MNES:

- Listed threatened species and communities (Sections 18 and 18A of the EPBC Act)
- Listed migratory species (Sections 20 and 20A of the EPBC Act)
- Commonwealth marine area (Sections 23 and 24A of the EPBC Act)

A transmission and infrastructure licence will also be required from the Commonwealth government under the recently established *Offshore Electricity Infrastructure Act 2021* (Cwlth).

5.3.2 Victorian approvals

The EES prepared under the EE Act provides an assessment of the impacts of the project which informs decisions under associated legislation. The key pieces of Victorian legislation under which the project must seek approval are:

- *Planning and Environment Act 1987* (Vic)
- *Marine and Coastal Act 2018* (Vic)
- *Aboriginal Heritage Act 2006* (Vic)

The EE Act is administered by DTP and provides the framework for the assessment of the environmental effects of projects that could have a significant effect on the Victorian environment.

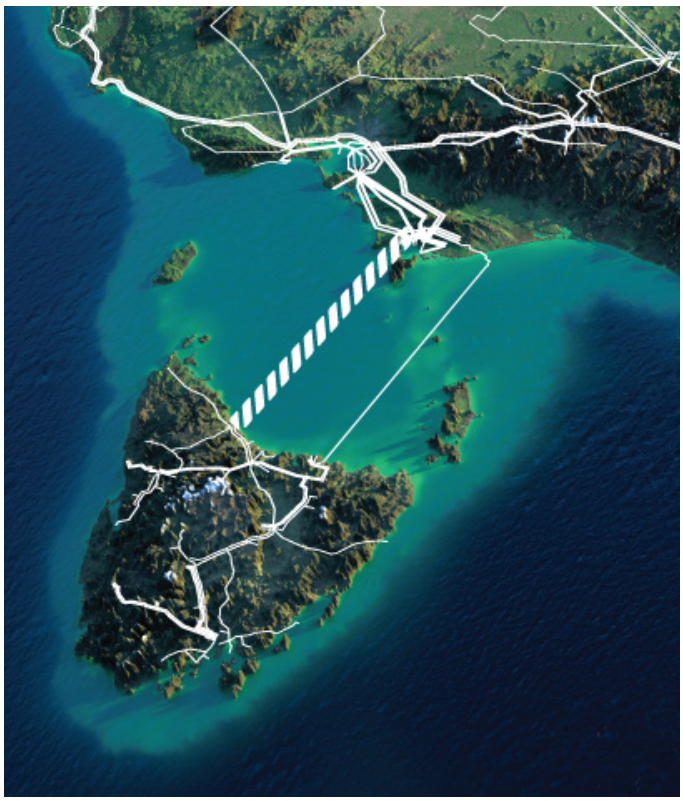
The outcome of an EES is not an approval. Rather it is an assessment by the Minister for Planning about environmental effects of a project and if they are acceptable. Following the completion of a public inquiry that considers public submissions on the EIS/EES, the Minister for Planning will to prepare an assessment of the environmental effects of the project (referred to as the Minister's Assessment). The recommendations in the Minister's Assessment will inform decision-makers issuing the key approvals under relevant Victorian legislation.

The key Victorian approvals are:

- Amendment of Latrobe City Council and South Gippsland Shire Council Planning Schemes under *the Planning and Environment Act 1987* (Vic) (P&E Act) through preparation of a Planning Scheme Amendment (PSA). The P&E Act provides for the draft PSA to be scrutinised by an advisory committee in conjunction with an EES. Following the Minister's Assessment, MLPL anticipates it will request that the Minister for Planning will prepare, adopt and approve a PSA in the proposed form, exempt from the need for further public notice and submission.
- Consent under Section 68(3) *the Marine and Coastal Act 2018 Act* (Vic) (MACA) for consent for the use, development and works on marine and coastal crown land. The MACA consent application will use the information contained in the exhibited EIS/EES. The Minister for Planning will inform a decision by the Minister for Energy, Environment and Climate Change on whether consent under the MACA should be granted.
- CHMPs under *the Aboriginal Heritage Act 2006* (Vic). Approval under the act must be obtained before commencing any project or action that has the potential to impact Aboriginal cultural heritage in Victoria. A CHMP must be prepared if an EES is required, under the Act. A CHMP for the northern section of the Victorian aspect of the project will be assessed by GLaWAC (the RAP in that area). The second CHMP for the southern portion of the Victorian section of the project will be assessed by FPSR, as there is no RAP for the area.

Further permits and licences will need to be obtained prior to the commencement of relevant construction or operational activities. This is likely to include:

- Secondary consents required by the proposed draft PSA including the Environmental Management Framework, and the Alignment Plans and Development Plans that will reflect the final design developed to comply with the EPRs. Secondary consents are the approvals obtained after the primary approvals. Secondary consents must be in place prior to commencement of relevant project works.
- Transmission and Infrastructure licence under ***the Offshore Electricity Infrastructure Act 2021*** (Cwlth), after an approval decision under the EPBC Act.
- Permit under ***the Wildlife Act 1975*** (Vic), prior to any activities that involve the disturbance or control of wildlife from activities, such as the installation of fencing, and wildlife capture, relocation, or hunting efforts.
- Permits under ***the Flora and Fauna Guarantee Act 1988*** (Vic) (FFG Act), for the removal of listed threatened species or communities from public or private land.
- Licence under ***the Water Act 1989*** (Vic), for works that cross waterways, and for any activities that require water to be sourced from waterways or groundwater.
- Permit under ***the Road Management Act 2017*** (Vic), for works near or across roadways, or requiring a modified use of the roadway (e.g., oversized vehicles, road opening, closure, or traffic diversion).



23.0.1. Transmission licence

A licence is required to generate, transmit, supply, or sell electricity in Victoria. On 20 December 2023 the Essential Services Commission (ESC) granted MLPL an electricity transmission licence to transmit electricity between Tasmania and Victoria and connect the project infrastructure into the existing transmission network in Victoria. The transmission licence will also enable MLPL to access land in accordance with the ***Electricity Industry Act 2000*** (Vic).

MLPL is committed to seeking voluntary agreements with all landholders where possible, both for investigations and for transmission easements. However the granting of the transmission licence means MLPL can use statutory powers to enter land for certain investigation and works under Section 93 of ***the Electricity Industry Act 2000*** (Vic), subject to compliance with the ESC Land Access Code of Practice (Version 1) (the Code) and payment of compensation. The objectives of the Code are to achieve a balance between the statutory right for licensed electricity transmission companies to access private lands and the rights of landholders. In addition, the Code regulates how electricity companies access private land using powers under Section 93 of the Act (where attempts to enter in agreements have been unsuccessful), establish conditions for access when excising powers under Section 93, regulate the information an electricity transmission company must provide to landholders prior to entering, and regulate ongoing reporting to ESC.

Granting of the transmission licence also opens the possibility for MLPL to seek approval of the Governor in Council to compulsorily acquire transmission easements under Section 86 of ***the Electricity Industry Act 2000*** (Vic), subject to meeting the requirements of the Land Acquisition and ***Compensation Act 1986*** (Vic) including payment of compensation. Despite this, as noted above, Marinus Link remains committed to seeking voluntary agreements with all landholders where possible.

6. Project description

The project description, together with the map book showing detail of the project alignment and construction footprint (Attachment 6– Marinus Link EIS/EES Map book), forms the basis of the impact assessments presented in this EIS/EES, and has informed the development of EPRs for the project. The EPRs define the environmental outcomes to be achieved to avoid and mitigate impacts regardless of the final design of the project. The EPRs are detailed in Volume 5, Chapter 2 – Environmental Management Framework. The final design and construction methods developed to respond to the EPRs and contractual requirements will be determined by preferred contractors.

The project description summarised here (see Volume 1, Chapter 6 – Project description for more detail) presents a feasible way that the project could be delivered and is the basis of the impact assessment presented in this EIS/EES. The final design and construction method may differ from this project description and will be determined by preferred contractors. Contractors will develop their final designs and construction methods to comply with the project approvals and EPRs following completion of the EIS/EES process, and to address landholder agreements.

6.1 Project components

The project comprises of two 750 MW (1500 MW total capacity) symmetrical monopoles using ±320 kilovolt (kV) cross-linked polyethylene (XLPE) insulated cables and voltage source converter (VSC) technology.

Each 750 MW monopole is referred to as a circuit and will comprise two power cables and a fibre-optic communications cable bundled together in Bass Strait and laid in a horizontal arrangement through the shore crossings and on land. Each 750 MW circuit comprises two HVDC power cables and a fibre-optic cable.

The key project components from south to north are:

- High voltage alternating current (HVAC) switching station and HVAC-HVDC converter stations (two converter stations so there is one for each circuit) at Heybridge in Tasmania, where the project will connect to the northwest Tasmania 220 kV transmission network.
- Shore crossing in Tasmania adjacent to the converter station.
- Subsea cables across Bass Strait from Heybridge in Tasmania to Waratah Bay in Victoria.
- Shore crossing at Waratah Bay approximately 3 km west of Sandy Point.
- Land-sea joint where the subsea cables will connect to the land cables in Victoria.
- Communications building (fibre optic cable inspection and test hut) adjacent to Waratah Bay.
- Land cables in Victoria from the land-sea joint to the converter station site adjacent to Hazelwood Terminal Station in the Latrobe Valley.
- HVAC switching station and HVAC-HVDC converter stations (two converter stations so there is one for each circuit) at Hazelwood and extension of Hazelwood Terminal Station, in Victoria, where the project will connect to the existing Victorian 500 kV transmission network.

The switching stations and converter stations infrastructure for both circuits are collectively referred to as the converter station for each of the Heybridge and Hazelwood sites.

A transition station may be required at Waratah Bay if there are different cable manufacturers or substantially different cable technologies adopted for the land and subsea cables. However, regardless of whether a transition station is needed, a communications building (housing fibre optic terminal station) will still be required in the same location.

The key components of the project are shown in Figure 4. Volume 1, Chapter 3 – Route section and project alternatives details the key project components.

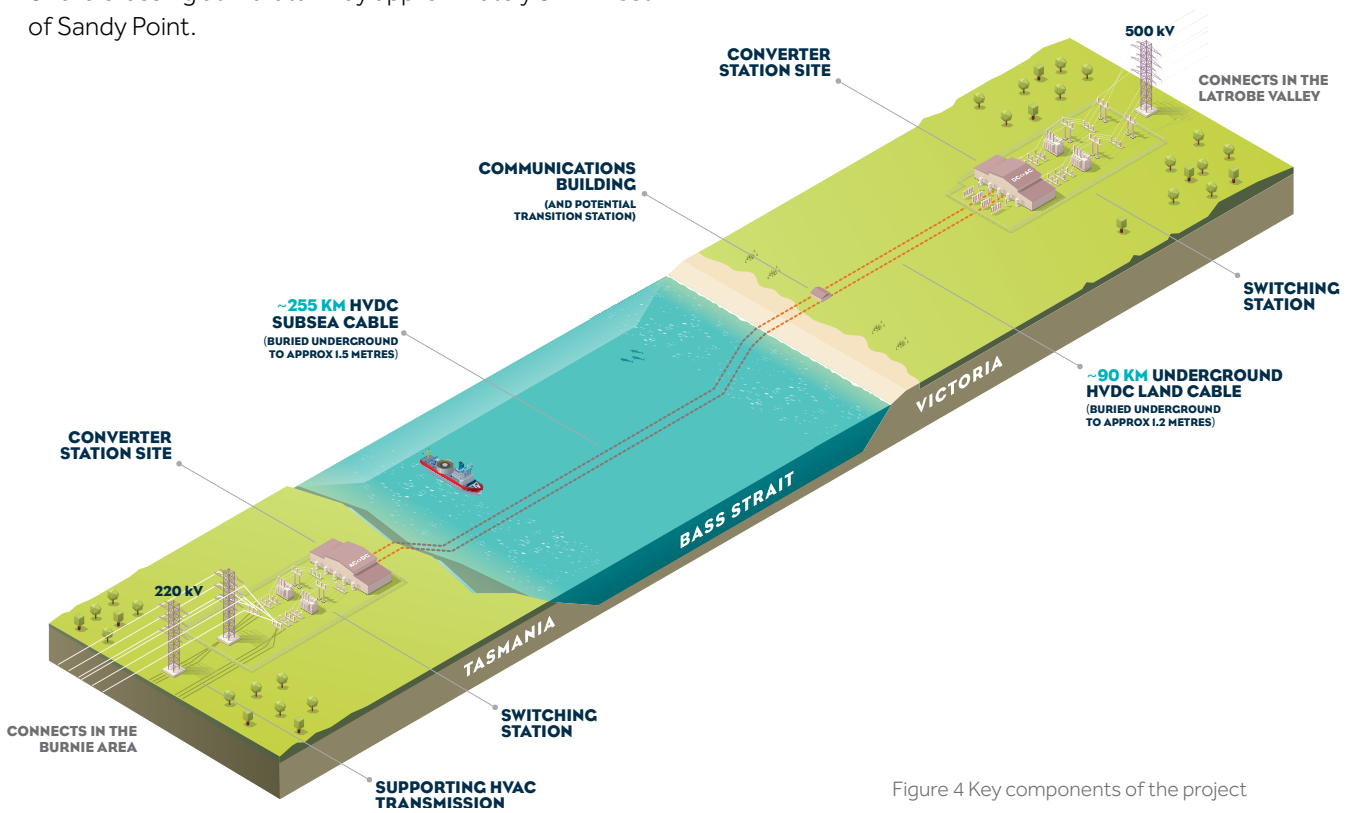


Figure 4 Key components of the project

6.1.1 Survey area and study area

A survey area, containing all the project components, was defined and assessed. The EIS/EES has assessed the defined survey areas for the terrestrial and marine project components.

The terrestrial survey area in Tasmania is defined by the property boundary of the Heybridge converter station site and the location of the shore crossings which extend from the site, under the Bass Highway and Western Line Railway to Bass Strait. Only EPBC Act matters for the Tasmanian survey area are discussed in this EIS/EES.

The marine survey area includes:

- A 200 m wide corridor along each project alignment in Commonwealth waters.
- Approximately 1 km wide for the Tasmanian shore crossing.
- Approximately 800 m wide for the Victorian shore crossing.
- A 10 m wide marine construction corridor along each project alignment.

The terrestrial Victorian survey area includes:

- A 220 m wide corridor. For some locations the survey area may be wider or narrower and follows property boundaries.
- In some instances, major laydown areas are adjacent to the 220 m survey area corridor and in some locations offset from the land project alignment.
- A 20 m to 36 m wide terrestrial construction corridor including minor laydown areas.

A study area has also been defined by each technical study, which may be larger or smaller than the survey area. The study area defined by each technical specialist has considered the local, regional, or state context needed to understand the issues and assess the impacts of the project, relevant for their discipline. The study area for each technical study is described in each of the technical chapters of EIS/EES Volumes 2 to 4.

6.2 Project stages

The project will be delivered in two stages. Each stage will deliver one complete 750 MW HVDC circuit between Tasmania and Victoria. Civil works, trenching and installation of cable conduits and joint pits for both stages will be completed in stage 1. This will minimise the extent of works associated with stage 2 and provide for the efficient delivery of the second circuit at a time determined by market demand.

Stage 1 will involve:

- Site establishment including laydown areas and constructing foundations for the converter stations, communications building and transition station for both circuits.
- All civil works, trenching and installation of cable conduits, and installation of cable joint pits for both circuits.
- Access tracks and haul roads to access the cable route, HDD locations and joint pits.
- Installation of the first HVDC converter at Heybridge and Hazelwood.
- Laying of the stage 1 land based and subsea cables.
- Testing and commissioning.
- Site reinstatement and rehabilitation.

Stage 2 will involve:

- Installation of the second HVDC converter at Heybridge and Hazelwood.
- Laying of the stage 2 land based and subsea cables, using conduits and joint pits installed as part of stage 1 works.
- Testing and commissioning.
- Any remaining site rehabilitation.

6.3 Design and construction

There will be two subsea cable landfalls at Heybridge with the cables extending from the converter station across the Bass Strait to the shore crossing at Waratah Bay in Victoria. The shore crossing will be constructed using HDD to approximately 10 m water depth, where geotechnical conditions permit. From approximately 10 m water depth, the cables would then be trenched. In Tasmania, the crossings will be drilled under the Bass Highway and Western Line Railway line, which are adjacent to the proposed Heybridge converter station site. The HDD will extend approximately 1 km offshore out along the subsea project alignment.

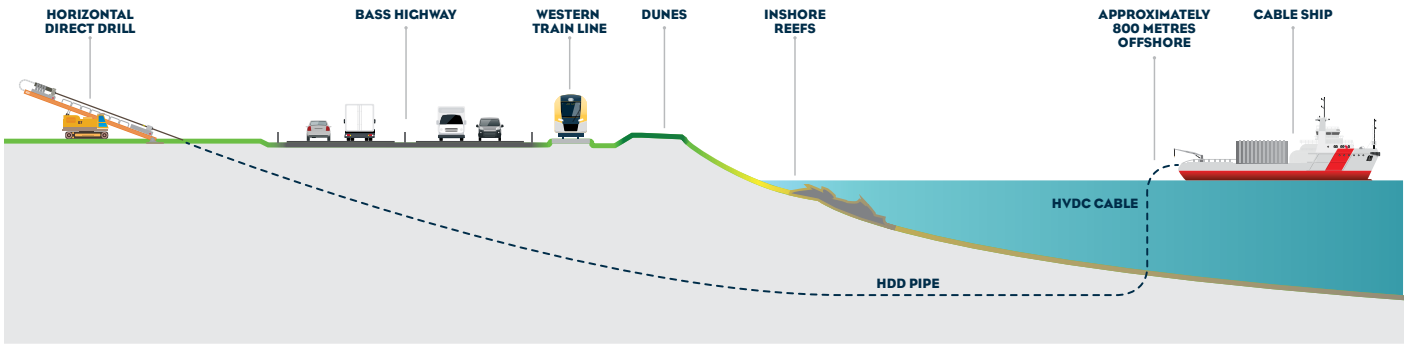


Figure 5 Tasmanian shore crossing

The HDD shore crossings, at the Tasmanian and Victorian landfalls, will be drilled continuously 24 hours per day, up to 7 days per week, to ensure borehole stability. The HDD drill pads will be approximately 100 m by 100 m and are expected to be between 800 m and 1,200 m long. The HDD drill pads will be temporary and only required for construction purposes. The HDD and duct installation for both circuits are anticipated to take 8 to 12 months.

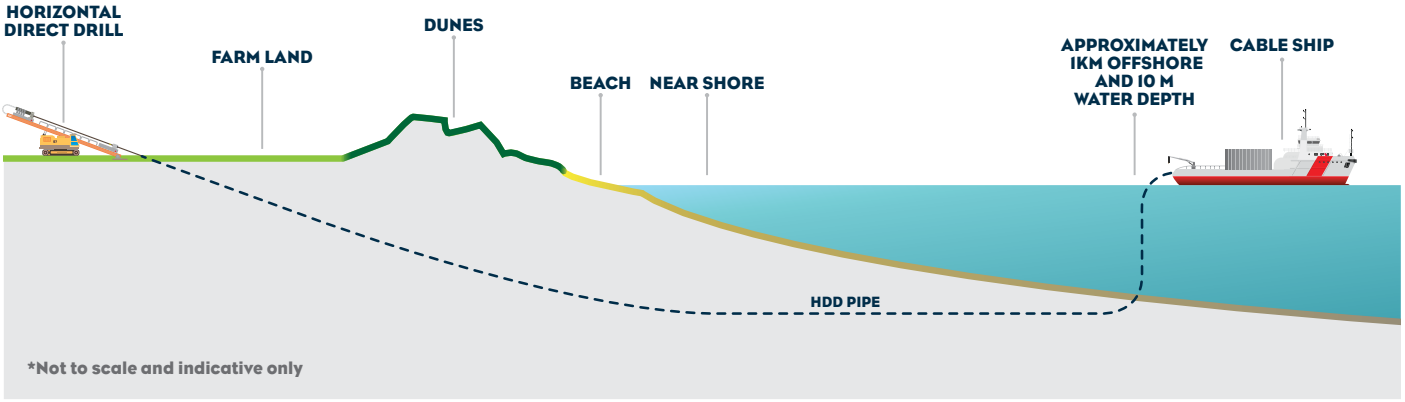


Figure 6 Victorian shore crossing

The Victorian shore crossing will be constructed using HDD to approximately 10 m water depth, with the boreholes approximately 10 m below the sand dunes. The HDD drill pad will be in farmland, as close to the coastal reserve as possible (without being within the coastal reserve). Three boreholes will be required for each circuit, one for each power cable and one for the fibre-optic cable. Waratah Bay beach (Victoria) will not be closed during construction, unless required to manage public safety concerns at the time, in which case disruption will be short term and temporary. Stage 1 and 2 ducts will be installed in stage 1 to avoid two separate drilling campaigns.

Approximately 255 km of subsea HVDC cable will be laid across Bass Strait. The preferred technology for the project is two 750 MW symmetrical monopoles using ±320 kV, XLPE insulated cables and VSC technology. Each symmetrical monopole is proposed to comprise two identically sized power cables and a fibre-optic communications cable bundled together. The cable bundles for each circuit will transition from approximately 300 m apart at the HDD (offshore) exit to 2 km apart in offshore waters.

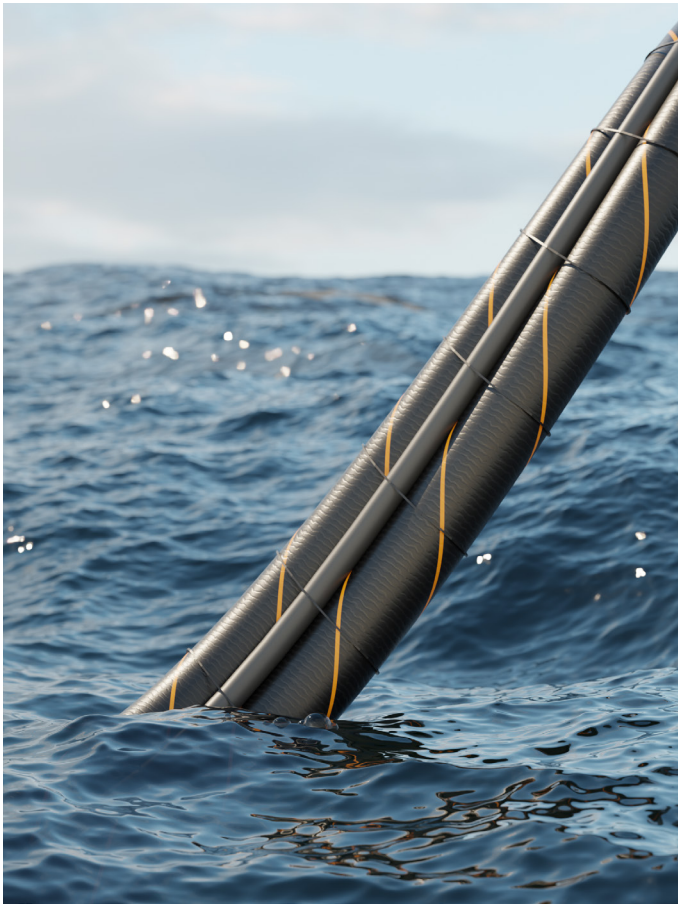
The subsea cable will arrive in Bass Strait already loaded on a cable lay vessel. A burial vessel will locate, bury and survey the as-laid location of the cable bundles on the seafloor. Geophysical and geotechnical surveys indicate the cable bundles will be buried using water jetting tools to fluidise the sand for the majority of Bass Strait, with small sections of harder substrate requiring mechanical trenching tools or rock mattressing to protect the cable.

After being laid on the sea floor, the subsea cable bundle is picked up and fed over the burial tools to avoid damage as the seabed is fluidised by water jetting. The subsea cable bundle is lowered into the fluidised seabed off the back of the burial tool. The cables will be buried to a depth of between 0.5 m to 1.5 m depending on the substrate. The cable trench will backfill with sand and silt by natural processes. Rock mattresses, concrete mattresses or cast-iron shells may be required in Tasmanian nearshore waters and in the palaeochannels to protect the cables where they are laid on hard substrate. Any area requiring cable protection such as crossing hard substrates or other cables and assets, will be undertaken as a separate campaign.

A transition station at Waratah Bay may also be required. The proposed location of the transition station will also house the fibre optic transition station in Victoria. A communications building (housing fibre optic terminal station) will is required, even if a transition station is not required.

From the land-sea joint located behind the coastal dunes, the land cable will extend underground for approximately 90 km to the converter station in Hazelwood. From Waratah Bay the cable would run northwest to the Tarwin River Valley and then travel to the north to the Strzelecki Ranges. The route crosses the ranges between Dumbalk and Mirboo North, before descending to the Latrobe Valley where it turns northeast to Hazelwood. The Victorian converter station will be at Hazelwood, adjacent to the existing terminal station.

The land cable construction corridor will encompass two trenches, haul roads, surface water runoff management structures, topsoil and subsoil stockpiles and major construction laydown areas. Major laydown areas are required at approximately 13 km intervals along the project alignment during construction of stages 1 and 2. The laydown areas will accommodate materials, spare parts, parking, a site office and amenities, and will be a nominal 100 m by 120 m. Major laydown areas and their components will remain in place until both stages of land cable installation are complete. Additional minor laydown areas will be located at up to every second cable joint pit, and accommodated in the 20 m to 36 m wide area of disturbance (AoD). All laydown areas are temporary and will be reinstated and rehabilitated following completion of construction activities.



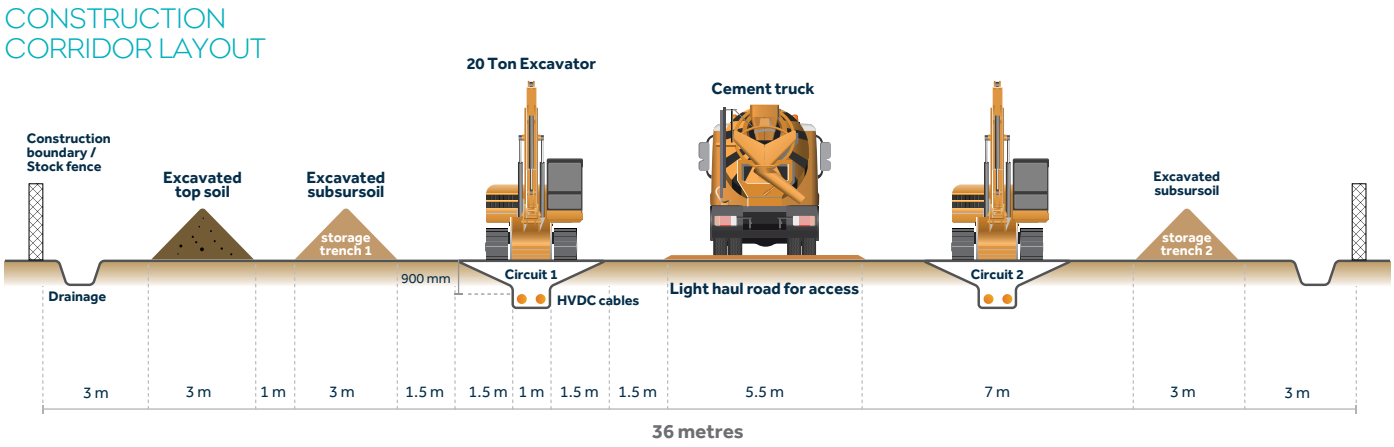


Figure 7 Land cable construction

The land cables will be directly laid in trenches or installed in conduits in the trenches. A construction area of 20 m to 36 m wide would be required for laying the land cables and construction of joint bays. Temporary roads for accessing the construction area would also be required to support construction. Where possible, existing roads and tracks will be used for access, for example, farm access tracks or plantation forestry tracks.

Land cables will be installed in ducts under major roads, railways, major watercourses and substantial patches of native vegetation using trenchless construction methods (e.g., HDD), where geotechnical conditions permit. A larger area than the 36 m construction area will be required for the HDD crossings.

Temporary workspaces including a construction corridor, access tracks, HDD drill pads and laydown areas will be reinstated and rehabilitated following the completion of project activities. Final land, and reinstatement and rehabilitation requirements, will be determined in consultation with landholders.

Volume 1, Chapter 6 – Project description provides details of key project components and construction activities.

6.4 Operation

The project will operate 24 hours per day, 365 days per year over an anticipated minimum 40-year operating life. Operation and maintenance activities will start after commissioning of the interconnector. These activities will include routine inspections, servicing, testing and repairing project infrastructure, and continue for the life of the project to ensure its safe and reliable operation.

The converter stations will be manned during normal working hours with converter station operators on a call-in roster. Operation and maintenance activities will include waste collection, routine maintenance, inspecting equipment, alarm response, outage coordination and planning, and training. A maximum of five light vehicles per day expected to enter and exit the converter station site.

Cable monitoring systems will be installed to identify the location of cable faults. Inspections of the subsea cable using a remotely operated vehicle (ROV) will occur periodically.

Visual inspections of the land cable will occur fortnightly from a public road or access track. The inspections will check for unauthorised activities in the easements, weeds and pests, and changes in landforms or ground conditions. Additional inspection may be required following major weather events such as earthquakes, major storms or rainfall events and fires, or if requested by the landholder or land manager. Routine maintenance of the land cable will typically be conducted by two workers using handheld equipment, every five years.

6.5 Decommissioning

The operational lifespan of the project is a minimum of 40 years. At this time, the project will be either decommissioned or upgraded to extend its operational lifespan.

If the project is decommissioned at the end of its 40-year design life, all above-ground infrastructure will be removed, and associated land returned to the previous land use or as agreed with the landholder. The activities will be similar to those required for construction of the project and are not expected to cause significant impacts to environmental values.

The key objective for decommissioning will be to leave a safe, stable and non-polluting environment and avoid or minimise impacts where infrastructure is removed. Remediation of any contamination and reinstatement and rehabilitation of the site will be undertaken to provide a self-supporting landform suitable for the end land use. Conduits for the shore crossings and waterway crossings will be left in situ to avoid the impacts of removal.

Decommissioning activities will be planned and carried out in accordance with regulatory and landholder requirements at the time of decommissioning. A decommissioning management plan for the Victorian, Tasmanian and marine components of the project will be prepared prior to planned end of service and decommissioning of the project, with approval sought under the relevant legislation at the time.

6.6 Environment and Sustainability Policy

MLPL's Environment and Sustainability Policy requires the integration of environment and sustainability principles into project activities across the construction, operation and commissioning phases of the project. The policy includes requirements to minimise the carbon footprint, manage resources efficiently and strengthen MLPL's action on climate change.

The Environment and Sustainability Policy can be found on the MLPL website here: marinuslink.com.au/wp-content/uploads/2023/10/Environment-and-Sustainability-Policy-FINAL-21082023.pdf

7. Potential project impacts

The project has sought to avoid impacts through the project's route selection and design. Potential impacts of the project have then been assessed based on the proposed design and construction method. Where the impact assessment has identified the need to reduce impacts, the project is applying an outcomes-based approach through the development of EPRs.

The key potential impacts of the project identified during the technical studies are summarised in the following sections. For detailed descriptions of all assessed potential impacts from construction, operation and decommissioning of the project, see the main EIS/EES report and technical appendices.

7.1 Economics (Victoria and Tasmania)

Economic impacts and outcomes were assessed through modelling both the value added to gross economic product and full-time equivalent job years. Economic modelling for the project predicts that it will generate public taxation receipts totalling $762 million between 2025 and 2050, from increased rates and revenues, property and payroll taxes and stamp duties, goods and services taxes and income taxes.

In Victoria, project construction is expected to generate 5,247 full-time equivalent (FTE) job-years over the assumed five-year construction period. This is largely in the construction industry where the project is expected to generate 2,244 FTE job-years. The tourism industry is also expected to benefit from the project, with the retail trade and accommodation and food services sectors together supporting an additional 900 FTE job-years during the construction period. Furthermore, the health care and social assistance industry is also expected to benefit from an additional 381 FTE job-years during the construction period. The increased demand for workers is expected to cause the agriculture, forestry and fishing, manufacturing and mining industries to lose 700 FTE job-years. Project construction is expected to generate $1.4 billion, peaking in 2027 when the project is expected to generate $421 million. Additionally, project operation is expected to generate 592 FTE job-years in Victoria. The construction industry is expected to benefit the most, with 525 FTE job-years generated.

In Tasmania, project construction is expected to generate 2,661 FTE job-years over the assumed five-year construction period. 1,337 FTE job-years of these jobs are expected to be generated in the construction industry. The increased demand for workers is expected to cause the agriculture, forestry and fishing, manufacturing and mining industries to lose 274 FTE job-years. Project construction is expected to generate $681 million, and at peak construction, the project is expected to generate $213 million.

Additionally, project operation is expected to generate 285 FTE job-years in Tasmania, benefiting the construction, agriculture, forestry and fishing, manufacturing and mining industries.

Overall, the project will generate a mix of positive and negative economic impacts for both Victoria and Tasmania. The implementation of the project's community benefits sharing program will help to realise benefits across the community and minimise the negative economic impact associated with FTE job-year losses in some sectors. Economics benefits and impacts of the project in both Victoria and Tasmania are discussed further in Section 6.21.

7.2 Sustainability, climate change and greenhouse gas

MLPL has developed an Environment and Sustainability Policy (see section 6.6) that provides overarching principles for delivery of the project in relation to environmental and sustainability matters.

Potential risks to the project due to climate-change-induced weather events and changes in conditions have been considered in the proposed design, construction and operation. This enables the project to be more resilient to events including extreme rainfall, extreme heat, changing coastal conditions, more frequent and severe bushfires, flooding, drought and storms. Project design will incorporate scenario planning and a risk assessment to assess the design parameters and engineering properties required to the effects of climate change. This is inclusive of industry standards to address climate change effects such as those outlined in AS/NZS 1170.2:2021 structural design action.

Project activities will result in Scope 1, 2 and 3 greenhouse gas (GHG) emissions stemming from fuel consumption, clearing of land and the embodied energy in materials used in construction. Scope 1 and 2 emissions (including emissions associated with land-use, land-use change and forestry) associated with the project are estimated to be 53,000 tCO2-e. Scope 3 GHG emissions associated with the project are estimated to be 162,926 tCO2-e. The amount of GHG emissions will be reduced by implementing measures to achieve the EPRs and comply with the sustainability framework.

Overall, the project is predicted to support reduction of GHG emissions by 140 million tonnes by 2050 through facilitating the transition to renewable energy, contributing towards Australia's GHG emissions reduction commitments under the Paris Agreement.

Project activities will generate waste, including paper and cardboard packaging, general construction debris and hazardous waste (i.e., hydrocarbons). MLPL will develop and implement a waste management plan, requiring all waste generated by the project to be managed in accordance with a waste management hierarchy of avoidance, reuse, recycling and disposal. Waste will be classified under the applicable regulations in each jurisdiction. The waste management plan will apply to the construction, operation and decommissioning phases of the project.

7.3 Electromagnetic fields

Electromagnetic fields (EMF) will be generated by the alternating current (AC) and direct current (DC) electrical apparatus, including the converter stations and DC land and subsea cables. Impacts may occur where project operation adds to the natural pre-existing levels of electromagnetic fields and causes them to exceed the reference level for a sensitive receiver.

Sensitive receivers include humans, flora and fauna, technology and water quality, which have defined reference levels of sensitivity to electromagnetic fields. The project is expected to generate electromagnetic fields below applicable reference levels for all except one sensitive receiver being honey bees. By adopting a modern HVDC cable design, the project will reduce the electromagnetic fields and heat produced.

The land cables could impact on the behaviour of honey bees situated directly above the buried cables, and within 5 m of the cable trench, where the calculated field levels are above 2 µT level recommended for beehives. No beekeeping sites are known within 5 m of the proposed cable route, but should any be identified, alternative sites will be discussed and agreed with the beekeeper.

Following the implementation of design measures to reduce EMF emissions, the EMF impacts associated with the project have been assessed as negligible.

7.4 Marine ecology

Construction activities required to lay cables across Bass Strait have the potential to impact marine species or habitats that support them.

The seabed surrounding the shore crossing HDD exit holes at 10 m water depth are sandy, with sparse seagrass, drift macroalgae, and inferred mixed fauna. The Tasman grass-wrack (*Heterozostera tasmanica*) seagrass, listed as endangered under the FFG Act, is the only threatened flora species that the project may intersect. The Tasman grass-wrack seagrass is sparsely distributed at the HDD exist hole depth and the total expected impact area of 18 m2 for all exit holes effects a very small portion of the total grass-wrack habitat (0.0002%). The total potential disturbance area for Tasman grass wrack from cable trenching and burial is approximately 3,100 m2, which is 0.028% of the 11 km2 of total habitat for the species in Waratah Bay.

The physical disturbance and changes in water quality, generated by the cable trenching and installation activities in nearshore and offshore environment, will impact a small area and be short-term in nature.

The use of artificial lighting during night-time construction may pose an impact to marine birds, fish and invertebrates. To minimise impacts to marine fauna and avifauna, measures will be implemented to minimise lighting, and directing project vessel lighting inboard and downward (where safe and practicable to do so). The impact from lighting due to night-time works is very low to low, given the short-term nature of the light source.

Several marine species are noise sensitive and may be impacted by the noise created by the cable lay vessel. Noise and vibration impact to a majority of marine fauna (i.e., fish, turtles, birds, invertebrates) are very low to low, given the noise impacts will only affect a very small proportion of the sensitive species' available habitat. The one potential moderate impact from project noise is to cetaceans that hear high frequencies and could result in a permanent threshold shift in their hearing. While possible, this is considered unlikely as an individual will need to stay in the AoD for 1 hour for the impact to occur. A cetacean interaction management plan will be prepared with measures to reduce impacts from underwater noise, including requirements to undertake visual monitoring for cetaceans, and maintain a separation distance from cetaceans during cable laying activities.

Project vessels have the potential to introduce invasive marine species (IMS), non-native marine plants or animals, animals to the Bass Strait, through ballast water or hull fouling. To avoid the spread of IMS, the project will implement a ballast water management plan and biofouling management requirements, in line with Commonwealth and international legislation, guidelines and conventions. Through the implementation of well-established management measures to comply with EPRs and given the limited number of international ships (i.e., a cable laying vessel) that will be involved in the project, the project is expected to have a low risk of introducing or translocating IMS.

During project operation, the magnetic, electric and thermal fields that are generated have the potential to impact marine fauna. This impact will be low or very low, as implementing cable modern design measures in line with the EPRs will limit the magnetic, electric, and thermal fields generated to a level that mitigates impacts.

Overall, the project is not likely to impact the recovery of threatened species or communities and will not have a significant impact on MNES. Direct and indirect impacts caused by the project can be avoided or managed through the implementation of measures to comply with EPRs.

7.5 Marine resources

The subsea cables will cross major and minor shipping routes, commercial fishing grounds, recreational areas and existing subsea infrastructure.

Most potential impacts to marine resources are associated with the temporary exclusion zones enforced during project construction. As the exclusion zones will follow the mobile cable lay vessel and are small, relative to the area available to users of Bass Strait, any impact will be mitigated to very low or low by communicating the location of the exclusion zones to maritime users via the Australian Hydrographic Office. This will allow fishing vessels, maritime traffic and other users to avoid the area, resulting in only a minor nuisance.

Further impacts to commercial and recreational fishing may occur due to project construction disturbing the seabed and indirectly impacting commercial fish stocks. The assessment found that these impacts will be low, as seabed disturbance will be localised, short-term and recoverable.

There are no permanent exclusion zones proposed around the subsea cable in operation, given the cable will be buried to a nominal depth of 1 m (0.5 m to 1.5 m). Therefore, operational activities will not restrict maritime traffic and fisheries operating in the area.

During project operation, the magnetic fields produced by the subsea cable has the potential to impact smaller vessels using magnetic compasses. Although Global Positioning System or gyrocompasses are the primary navigation tool used by larger vessels, smaller vessels may utilise magnetic compasses. Magnetic compasses will only be impacted when in very close proximity (less than 10 m) to the cable. Project design measures to reduce EMF emissions and electromagnetic interference below the reference levels will be implemented for the project alignment onshore, meaning the residual impact to magnetic compasses will be very low.

7.6 Underwater cultural heritage

Underwater cultural heritage includes any maritime and First Peoples cultural heritage objects or sites submerged in the ocean. Impacts to underwater cultural heritage could occur when construction activities coincide with archaeologically significant sites and objects on or under the seabed.

The underwater cultural heritage technical study assessed tangible cultural heritage. Intangible cultural heritage is being assessed through preparation of cultural values assessments (CVA) that will inform the two CHMPs being developed for the project.

Although there are no identified instances of Aboriginal cultural artefacts in the marine study area, the study did identify submerged landforms that have the potential to contain artefacts. The three submerged landforms in the study area include a beach ridge strandplain, an estuarine channel and beach ridges. These landforms occur in Victorian and Commonwealth waters.

Project activities that disturb the seabed, such as cable trenching and burial, have the potential to disturb submerged landforms. However, it is unlikely the landforms

will be impacted by project activities, as the offshore landforms are buried by thousands of years of sediment build up and are therefore deeper (around 2 m) than the nominal impact depth (up to 1.5 m). Further, project activities are expected to avoid rocky seabeds, such as at the beach ridge strandplain.

Further detailed information about the submerged beach ridge landforms will be collected to more accurately model and position the submerged landscape and inform design refinement to mitigate impacts. This information about the submerged beach ridge formation will also be provided to First Peoples.

Maritime cultural heritage that could be in the study area includes potential shipwrecks and potential vessel discards on the ocean floor. There are also geophysical anomalies, which are features, identified during geophysical surveys, that are distinct from the surrounding seabed and could be culturally significant. The assessment identified no instances of maritime cultural heritage in the study area, however geophysical anomalies were identified that could be culturally significant, and there may be unidentified shipwrecks and vessel discards present.

The impact assessment found that impacts to these potential values will be low or nil, and are mostly improbable. Unverified geophysical anomalies in the Victorian nearshore section of the study area are more than 100 m from the project alignment and therefore will not be impacted by cable laying. If the alignment changes, any anomalies within 10 m of the alignment will be inspected. Following this, a qualified maritime archaeologist will determine what specific mitigation is appropriate. An underwater cultural heritage management plan, including an unexpected finds protocol,v will be prepared to manage potential impacts to underwater cultural heritage during construction.

The technical study of underwater cultural heritage identified no shipwrecks in Tasmanian or Victorian waters, which means they could be located in adjacent areas. However, as their presence cannot be discounted, the underwater cultural heritage management plan will be implemented to avoid or minimise impacts to shipwrecks.

7.7 Geomorphology and geology

The project traverses a geomorphically active landscape, where multiple factors combine to create a dynamic landscape that shows evidence of slope instability and recent landslides. The geomorphology varies, crossing gently inclined low-elevation terrain, areas of elevated hillslopes that hold drainage lines, and rivers and streams with associated floodplains and valleys.

For the purpose of the geomorphology and geology assessment, the Victorian terrestrial project alignment has been divided into 187 trench sectors, that have unique geomorphological characteristics (including relief and slope, landform stability, erosivity and hydrology) and combine to create a unique section of landscape.

Construction activities will require vegetation clearance and ground disturbance (including ground level earthworks and below ground earthworks), which may result in impacts on the trench sectors, including impacts to slope and landform stability, surface water flow, groundwater dynamics, watercourse form and soil properties.

Prior to the implementation of EPRs: 70 trench sectors were assessed to have either a major or high impact, 114 trench sectors had a moderate impact and 3 trench sectors had a low impact. The EPRs will require detailed ground conditions and landform stability assessments to inform the detailed design and development of engineering measures for construction management. The design measures must reduce landslip risks to tolerable levels in accordance with relevant Australian Geomechanics Society landslide management guidelines.

Following the implementation of measures to comply with EPRs, 69 trench sectors have been assessed as having a moderate residual impact, and 13 trench sectors have been assessed as having a high residual impact on geomorphic properties and land stability. The high impacts are largely related to uncertainty about ground conditions and landform stability (including evidence of slope instability, landslides, etc). The EPRs require further investigation and testing at these locations to assess uncertainty about ground conditions and landform stability (including evidence of slope instability and landslides) to inform the design and site-specific construction methods. The

moderate impacts are those where the change is potentially medium-term, generally contained within the project area, and require remediation to avoid further degradation. In these areas the impacted geomorphic attributes can be reinstated with standard mitigation. Additional measures will be implemented to comply with the EPRs, to maintain geomorphological stability, including assessing and considering ground conditions during construction activities, and developing and implementing methods to maintain slope and trench stability.

7.8 Contaminated land and acid sulfate soils

Potential sources of contamination in the study area include agricultural practices, illegal dumping, accidental spills and industrial activities. Impacts occur when project activities disturb potential sources of contamination, or when construction materials leak or spill into the environment and humans, flora and fauna, or waterbodies become exposed. A risk assessment was completed to assess the potential environmental risks that construction activities pose to these values.

Several potential sources were identified in the study area including a former industrial site, potential per- and poly-fluoroalkyl substances (PFAS) containing sties, a petrol station and intensive agricultural practices. Two areas, Waratah Bay area and a section of Eel Hole Creek feeding into the Hazelwood pondage area, were categorised as a high probability of containing acid sulfate soils (ASS).

To manage the environmental risks that construction activities pose to values, EPRs will require the implementation of measures to avoid or manage known areas of risk as well as unexpected finds. Where practicable, areas of identified wastes and/or potential contamination will be avoided through micro-realignments of cable route. Material generated from excavation or trenchless construction methods will be managed in accordance with the Environment Protection Act 2017 (Vic) (EP Act) and Environment Protection Regulations.

A site investigation is required for all properties identified with medium to high risk of contamination to identify the location, types and extent of contamination. A contaminated land management plan will be developed in consultation with EPA Victoria and implemented during construction. By implementing these measures to comply with EPRs, the risk to human and ecological values from contaminated land has been assessed as very low to low.

Site investigations will be required to confirm the location and extent of potential ASS that could be disturbed by the project. The EPRs will require the management of potential ASS, to limit or treat acid generation and identify suitable sites for the management, re-use or disposal of any ASS spoil. These measures will be documented in an ASS management plan, to be developed in accordance with relevant industry guidelines and policies, including the Industrial Waste Management Policy (Waste Acid Sulfate Soils), EPA Publication 655.1: Acid Sulfate Soil and Rock. Following the successful implementation of measures to comply with the EPRs, the risk of impacts occurring from disturbing ASS is low to very low.

7.9 Groundwater

Groundwater refers to the water present in underground saturated zones beneath the surface. Groundwater is an essential natural resource that sustains ecosystems, supports human activities, contributes to social and economic development and has cultural and spiritual significance. The project is anticipated to intersect shallow groundwater along some sections of the project alignment.

Groundwater monitoring is required to establish baseline groundwater conditions prior to construction. Monitoring of groundwater levels and quality will also be required in areas of higher potential impact during construction. The EPRs require the completion of a detailed hydrogeological assessment and dewatering drawdown assessment at locations identified along the final project alignment that are likely to encounter groundwater during construction. This assessment will inform the final design and construction measures to be documented in a groundwater management plan and implemented during construction. Following the implementation of measures to comply with the EPRs, the impact to groundwater in construction phase of the project will be low.

Construction activities will temporarily dewater aquifers, which may result in exposure of ASS or allow for saline

intrusion of groundwater in coastal areas. Groundwater levels are expected to return to current levels, as the duration of dewatering will be localised, short term and manageable with standard mitigation measures.

Impacts to groundwater may occur during operation if the material used for backfilling the cable has lower or higher conductivity than the natural soil layers affecting groundwater flow or recharge, resulting in an aquifer damming effects or increased recharge. This impact will be managed through EPRs requiring existing soil be used to backfill trenches (where suitable), meaning the residual impact will be low.

Contamination of groundwater may occur during construction and operation from the use of potentially toxic substances. With the implementation of measures to comply with EPRs, including the use of non-toxic drilling additives during drilling activities, and requirements to manage chemicals and hazardous materials in line with relevant guidelines, the impact would be low.

7.10 Surface water

Surface water includes water on the land's surface including streams, lakes and wetlands. Flood storage and transport of floodwaters, surface water quality and waterway stability are key values associated with surface water. Surface water impacts occur when project activities, including ground disturbance, affect these values.

The study area includes 82 waterways, however as many of these waterways are small and/or ephemeral, the assessment focused on eight major waterway crossings (Morwell River, Little Morwell River, Tarwin River East Branch, Tributary of the Tarwin River East Branch, Stony Creek, Buffalo Creek, Fish Creek).

Of the 82 waterways along the project alignment, HDD will be used to cross 15 waterways including seven of the eight of the major waterway crossings. HDD of the major waterway crossings will avoid direct impacts to water quality and erosion in those locations.

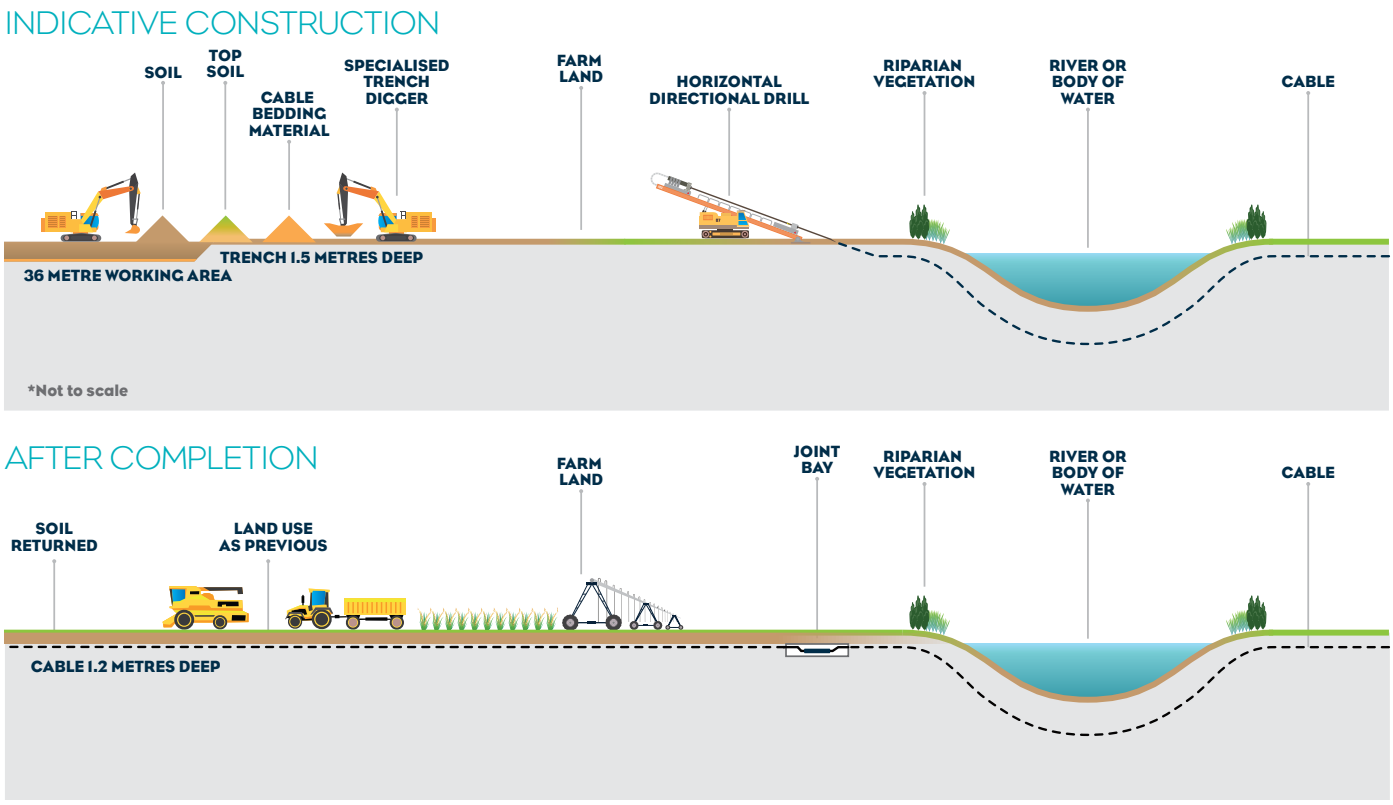


Figure 8 HDD under waterway

Temporary construction activities such as stockpiling soil and materials, establishing laydown areas and constructing access roads may modify topography, take up floodplain storage and alter flow. This can change floodplain function and extent and potentially increase the risk of flooding. Given the short duration and relatively small area of construction activities, coupled with standard controls for minimising impacts on flooding, the residual risk is expected to be low. Flood modelling will also be undertaken to confirm flow paths and inform the mitigation measures developed through design and implemented in construction.

Project construction activities such as excavation, soil stockpiling, and heavy vehicles and machinery on channel banks may lead to increased sedimentation from runoff of disturbed areas, which may then have impacts on water quality. Construction may also directly alter waterways, leading to flow disruption, erosion, and potential impacts on water quality, habitat and species diversity. Construction activities involve the use of hazardous materials, which without careful management, can be introduced to waterways and compromise their water quality. The residual risk of these impacts to water quality is low, as the EPRs require the reinstatement any works on waterway banks, management of spill risks, and management of stormwater and site runoff to minimise erosion and sediment release. A surface water management plan will also be developed that includes measures for the containment of hazardous materials from the project and emergency response procedures if frac-out occurs during HDD.

The impact pathways identified for flooding and water quality could also impact the stability of waterways. With the implementation of measures to align with the EPRs, including the management of site runoff, erosion and changes in flood water flows, and reinstatement works on waterway banks, the residual risk to waterway stability is low. A surface water monitoring program will also be implemented to monitor surface water quality before and after construction.

With the majority of the project located underground, there will be limited impacts to surface water during operation. Surface levels will be reinstated after any excavation undertaken for the project to avoid and otherwise minimise impacts to surface flows and flood waters, whilst project sites will be designed to contain spills of any hazardous materials stored on site. Following the implementation of measures to comply with EPRs, the impacts associated with project operation were assessed as being low.

7.11 Agriculture and forestry

Agriculture and forestry are prominent in Gippsland and contribute significantly to the region's economy. The prominent agricultural types identified in study area comprise of beef, dairy, horticulture and organic farming. There are extensive plantation forests in the Strzelecki Ranges and foothills, with the prominent plantation type in the study area comprising of softwood plantations.

The agriculture and forestry values that could be impacted by the project activities are land capability, infrastructure and practices and planning. Impacts to these values may occur where construction activities disturb or degrade productive land, generate dust that leads to reduced amenity or reduced productivity or yields, introduce biosecurity risks that reduce agriculture or forestry productivity, or cause landholders to need to modify their operations or practices.

Prior to construction, MLPL will complete property condition surveys to document the existing conditions and operations of each agricultural and forestry property disturbed during construction. The condition surveys will inform the development of property management plans that will identify specific measures to avoid or minimise disruption to farming on the property during construction. A key aspect of the plans will be requirements for progressive reinstatement and rehabilitation to minimise impacts to productivity and agricultural practices. A soil management plan will also be developed in consultation with the landholder, as a sub plan to the property management plan to avoid or minimise impacts on soil fertility and soil horizons. Specific controls will also be required for organic farming to avoid impacts to organic farming certification.

Land and infrastructure will be returned to its previous condition following completion of construction activities. A two-year inspection program will be carried out to confirm that land capability is reinstated after construction.

During construction, land access will be managed through access licences or construction leases with landholders. These agreements will include compensation for landholders for use of their land during construction. Impacts during construction will largely be temporary where areas are reinstated, and prior land use is able to

recommence. The project will however lead to some direct loss of land available to forestry as plantations can't resume within the easement and farm development plans may also be constrained by the restrictions that will apply within the project easement.

MLPL will rehabilitate the land following construction and return agricultural land to a state where farming operations can continue or resume as normal. Properly rehabilitating land involves returning soil to where it was removed from, in the correct order (i.e., topsoil on top) and preventing ground collapse around the cable lay areas. Returning land to a state where farming operations can resume as normal involves allowing paddocks and farming infrastructure, where access was reduced during construction, to return to normal accessibility as quickly and safely as practicable.

With the implementation of EPRs, the impacts on agriculture and forestry during construction will be low for all agriculture types except dairy operations, organic farming and forestry which have some moderate residual impacts. The moderate residual impact for organic farming reflects that achieving and maintaining organic status is time consuming and that reinstating organic soils is more costly and time consuming than non-organic crops. The moderate residual impact for dairy farming reflects the potential impacts due to changes or restricted access to pasture and stock infrastructure, given dairy farming has specific requirement for stock management (i.e., twice daily stock movements to and from milking sheds). The moderate residual impacts to these types of agriculture will be managed through consultation with landholders, and the development of detailed property management plans to minimise the impact on farming operations and enable the successful rehabilitation of the land.

The project alignment has been designed to minimise disturbance to forestry coupes by locating infrastructure in areas where there are existing access tracks and where disturbance to forestry operations and wood stocks can be avoided as much as possible. Moderate residual impacts on forestry could occur due to the loss of wood stock and reduced wood flows from permanent clearing of trees, which cannot be replanted in the easement. There could also be a loss of wood stock and reduced wood flow from introduced diseases.

MLPL will work with the forestry land managers through alignment refinement to further minimise impacts during construction and operation. The loss of wood stock from permanent clearing are not expected to affect plantation development plans. Property management plans will be prepared for forestry properties to reduce the impact to plantation coupes, access arrangements and harvesting activities, and will also outline biosecurity controls to stop diseases being introduced to the plantations.

7.12 Landscape and visual

The assessment of impacts to landscape and visual amenity considers the impacts to landscape character, significant or valued landscapes and sensitive viewing locations. The Victorian terrestrial component of the project will consist of largely below ground infrastructure, except for the transition station and converter station. Considering this, impacts to landscape and visual amenity will predominantly occur during construction.

The assessment considered the project's visual impacts during construction and operation from 18 viewpoint locations within the public domain. During construction, temporary visual impacts will occur where the construction activities are visible from public roads, the Grand Ridge Rail Trail and from the townships of Buffalo and Dumbalk. The construction work front will move forward, before vegetation screening mitigation measures come into effect. Changes to visual amenity associated with the construction of the project will be short-term and temporary in nature, as the construction work front moves along the project alignment. The residual impacts for landscape and visual amenity range from low to nil.

During operation, the overall residual landscape and visual impacts will be low as most of the project infrastructure is underground and has been located to avoid townships and residentially zoned land. The alignment has also minimised the length of sections where the project will run parallel to major roads, highways, and tourist routes. Impacts to visual amenity will be further minimised through vegetation screening and design elements (i.e., using colours that reflect existing vegetation, articulation of building facades) that minimise contrast with the existing landscape view.

7.13 Traffic and transport

Impacts to traffic and transport occur when a project generates increased volumes of traffic, leading to impacts on the condition, safety and performance and capacity of the road network. Much of the road network that will be used during construction and operation is supported by high volume arterial roads. Some minor local roads, bridges and culverts in the study area may not have sufficient capacity to support project vehicles.

The most significant impact associated with construction traffic will be the movement of large construction vehicles and the transformer transporter vehicle on roads not designed to accommodate these large vehicles. Impacts will be managed by upgrading pavement, bridges, intersections and other road infrastructure to accommodate large construction vehicles, in line with the recommendations of the road safety audit and condition inspections.

Construction will lead to a minor increase in traffic from project vehicles, marginally increasing the inherent crash risk associated with driving. Distributing peak event traffic and implementing a transport management plan in accordance with DTP and local requirements, will mitigate these impacts and allow the continued effective and safe functioning of the road network. The transport management plan will also document the proposed route of the transformer transporter, including consideration for height and geometric requirements.

Other potential impacts include minor local roads operating over capacity and the minor increase in traffic from project vehicles marginally increasing the inherent crash risks associated with driving. Distributing peak event traffic and implementing a transport management plan, will mitigate these impacts and allow the continued effective and safe functioning of the road network.

Following the implementation of measures to comply with EPRs, residual impacts during construction are mostly low or very low. Some moderate residual impacts remain as there will be a change to the road network and its operation during the construction phase on the project. Some of these impacts will occur for the duration of project construction while others will be more short-lived, being tied to a specific aspect of construction (e.g. the movement of the transformer transporter vehicle).

7.14 Air quality

Risks to air quality will occur where emissions, odour and dust caused by project activities interact with sensitive receivers.

The key activities associated with dust generation during construction are upgrades of roads, excavation, trenching and vegetation clearance. The primary impact that may be observed by nearby residents, will be the increased rate of dust build-up on surfaces, due to deposition. These impacts will only be experienced for a short, temporary period, while construction works are carried out near their property.

Odour may be produced during earth works if there is presence of contaminated material or naturally occurring sulfate or arsenic. As areas of the alignment potentially contain ASS, there is a potential that disturbance of these soils may result in air quality impacts. This impact will be managed through the implementation of an ASS management plan, requiring the implementation of measures to prevent release of acid and odours to the environment, including lining, covering and runoff collection.

A construction dust management plan will be developed and implemented in accordance with EPA Victoria requirements and guidelines with measures to manage and supress dust emissions. Through the implementation of standards and dust management controls measures (i.e., suppressing dust with water spraying, removing materials that have a potential to produce dust) to comply with the EPRs, the project is not expected to result in significant or measurable impacts on the health of the community. During construction, the residual risk of impact for dust soiling and to human health is low during earthworks and vehicle trackout. All other risks of impact are negligible. These risk assume effective implementation of the EPRs and mitigation measures including dust suppression measures, and air quality monitoring and management.

7.15 Noise and vibration

The noise study identified sensitive receivers, defined as buildings and areas used by people for purposes that are sensitive to noise and vibration. Natural areas in the vicinity of the project, such as national and state parks, are also considered sensitive to noise and vibration. The assessment considered risks of harm to human health or the environment as a result of noise and vibration associated with construction and operation of the project.

The project has the potential to cause impacts where noise from these sources reach receivers and disrupt ambient noise conditions conducive to sleep during the night, domestic and recreational activities, normal conversation, child learning, and development and musical entertainment. Primary sources of noise and vibration include equipment used in constructing and installing the cable and converter station, HDD and vehicle movements.

Given cable laying activities are relatively fast moving and temporary as the works progress along the alignment, the risk of noise and vibration impacts on sensitive receivers was assessed as low. Risks will be mitigated through works scheduling, selection of low noise and vibration emitting equipment, and consultation with receivers, in line with the construction noise and vibration management plan and measures to comply with EPRs.

The assessment found that HDD for the shore crossings at Waratah Bay pose the highest risk of impact to sensitive receivers, given the potential for noise emissions over a 12-month intermittent construction window, including night works. These risks will be mitigated to a manageable level of moderate, by implementing measures to comply with a construction noise and vibration management plan that will be developed in consultation with EPA Victoria. With the implementation of measures to comply with EPRs, the residual risk of harm from construction noise and vibration will be medium for night works (unavoidable works) associated with the continuous HDD at the shore crossing.

There is a low risk of noise generated from additional vehicle movements during project construction causing impacts due to the low number and intermittence of traffic movements, even at peak construction periods. This risk will be mitigated by scheduling heavy vehicle movements on arterial roads and during normal working hours, where feasible.

The operational noise from the converter station is expected to pose a low risk, as noise levels generated are predicted to be well below background noise levels at sensitive receivers. The selection of low noise emitting converter station infrastructure and the use of site-specific noise attenuation measures (sound buffering enclosures), will mitigate the risk to the ambient noise during the operation phase of the project. These noise mitigation and management measures developed in design will be documented in an operation noise management plan for the converter station and transition station sites, in consultation with EPA Victoria. The operation noise management plan will also document procedures to investigate noise complaints or suspected noise compliance issues.

The EPRs require the development of a detailed noise and vibration impact assessment for noise generating work that could impact sensitive receivers. The purpose of the EPR is to establish the requirement for more detailed assessment and noise control planning to address long-term work sites (e.g., the converter station) or sites involving extended periods of unavoidable works outside normal working hours (e.g., the shore crossing).

7.16 Terrestrial ecology

Terrestrial ecology values can generally be grouped as native vegetation and associated habitat, threatened species recognised under state (FFG Act) or national legislation (EPBC Act), and threatened ecological communities recognised under state, national legislation and relevant MNES. The technical study considered all relevant national recovery plans, threat abatement plans and conservation advice for ecological values.

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 cause 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. Most impacts are temporary or short-term in nature, as the work front moves along the project alignment. However, the release of dust emissions and pollutants, or the introduction of pests or weed species, poses a risk of a longer-term impacts to ecological values.

The residual impact assessment for terrestrial ecology assumes a fully mitigated scenario. MLPL is seeking approval and offsets for a worst case scenario of terrestrial ecology impacts, which assumes:

- The successful implementation of measures to comply with EPR EC01, which requires the avoidance of impacts to the EPBC Act listed Gippsland Red Gum (Eucalyptus tereticornis subsp. mediana), Grassy Woodland and Associated Native Grassland TEC including the related FFG Act listed threatened community.
- All other impacts as per the pre-mitigated impact assessment.

Based on the above, the worst case scenario for impacts to native vegetation is 21.1 ha (the pre-mitigated total impact of 21.21 ha minus the 0.11 ha area of TEC, avoided through EPR EC01).

MLPL is seeking approval and offsets for the worst case scenario to reach a conservative position on the impacts of the project on native vegetation. Where impacts are further avoided through the implementation of measures to comply with terrestrial ecology EPRs, the ultimate areas of native vegetation impacted by the project may reduce, and the offset requirements may change.

7.16.1 Native vegetation and habitat in Victoria

Most of the project alignment in Victoria has been highly modified by human activities, comprising predominantly of agricultural, rural living and forestry plantation land. Small, fragmented patches of native vegetation (scrubs, woodlands and forests) are found along road reserves, property boundaries, creek lines and scattered trees. Throughout the project alignment, there is ecologically valuable native vegetation alongside roads and rail trails.

Project construction impacts to native vegetation and habitat involve direct impact pathways and indirect impact pathways. Prior to the application of measures to comply with EPRs, 8.34 ha of native vegetation (including 184 large trees) will be lost due to direct impacts and a further 12.87 ha of native vegetation (including 145 large trees) could be lost due to indirect impacts during the construction phase. This is a total of 21.21 ha of native vegetation (including 184 large trees). This constitutes a magnitude rating of moderate.

Direct impacts to native vegetation and habitat will be avoided or minimised through minor realignments in the AoD, reducing the overall width of the AoD, and the use of trenchless technologies (i.e., HDD) at sensitive locations. Prior to the commencement of construction, a vegetation quality assessment at locations that could be impacted by the final design will confirm the vegetation type and extent. The implementation of a biodiversity management plan will include measures to manage the risk of the introduction and spread of environmental weeds and diseases during construction, in areas supporting native vegetation and critical habitats.

Following the successful implementation, direct construction impacts may be reduced to 4.13 ha of native vegetation removed (including 29 large trees) and 2.45 ha of consequential losses (including 14 trees). This results in a minor impact magnitude and a post-mitigation impact of low.

7.16.2 Native vegetation and habitat in Heybridge, Tasmania

The converter station site at Heybridge is a 10.8 ha area comprising of predominantly modified land (9.3 ha). This modified land includes cleared land (8.2 ha), tree plantings (0.6 ha) and weeds (0.5 ha). A small area (1.5 ha) of native vegetation, Eucalyptus amygdalina coastal forest and woodland, is located on the southeastern corner of the Heybridge converter station site.

The shore crossing survey area is a 6.5 ha area, comprising of native forest (2 ha), native scrub (3 ha) and sandy beach (1.5 ha). The native vegetation communities on the shore crossing site include E. viminalis–E. globulus coastal forest and woodland and Coastal scrub.

As trenchless construction methods (such as HDD) will be used for the shore crossing, no vegetation clearance is required in the coastal area between the Heybridge converter station site and the shoreline. Some clearance of modified vegetation, including tree plantings and weeds, will occur within the converter station site, however, no native vegetation is proposed to be cleared.

7.16.3 Threatened ecological communities in Victoria

Project construction activities have the potential to impact the EPBC Act listed Gippsland Red Gum (Eucalyptus tereticornis subsp. mediana), Grassy Woodland and Associated Native Grassland threatened ecological communities (TEC), through direct impact pathways and indirect impact pathways.

Prior to the application of measures to comply with EPRs, construction activities will lead to the direct removal of 0.11 ha of this ecological community. This TEC is critically endangered under the EPBC Act, and the removal of this habitat will result in long-term significant impact that is likely to be irreversible.

This community is identified as an area of critical habitat to be avoided through the implementation of measures to comply with EPRs. Direct and indirect impact pathways to this TEC will be managed through the implementation of measures to comply with EPR EC01, which requires the avoidance of impacts to the EPBC Act listed Gippsland Red Gum (Eucalyptus tereticornis subsp. mediana), Grassy Woodland and Associated Native Grassland TEC, including the related FFG Act listed threatened community.

Therefore, the project is unlikely to interfere with the recovery or have a significant impact on this TEC.

Threatened ecological communities in Heybridge

Two EPBC Act listed threatened ecological communities were identified as potentially occurring within the study area:

- **Tasmanian Forests and Woodlands dominated by black gum or Brookers gum** (Eucalyptus ovata / E. brookeriana) (listed as critically endangered under the EPBC Act).
- **Tasmanian white gum** (E. viminalis) wet forest (listed as critically endangered under the EPBC Act).

Neither community was recorded within the survey area during field surveys and is therefore unlikely to be impacted by the project.

7.16.4 Threatened flora species in Victoria

The desktop assessment determined that 37 threatened flora species are present or likely to occur within the Victorian survey area, comprising of the following:

- **Coastal dune species in Waratah Bay**
- **Waratah Bay woodland flora**
- **River swamp wallaby-grass**
- **Threatened eucalyptus species throughout the project alignment**
- **Strzelecki Ranges dry forest flora**
- **Strzelecki Ranges damp or wet forest species.**

7.16.5 Coastal dune species in Waratah Bay

The coastal dune species in Waratah Bay subgroup comprise of the:

- **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)
- **dune wood-sorrel** (listed as endangered under the FFG Act)
- **coast fescue** (listed as endangered under the FFG Act).

Coastal dune species are considered likely to occur in low scrub and tussock grasslands within the coastal dunes of Waratah Bay. Direct and indirect impacts to coastal flora are largely avoided as construction will avoid suitable habitat and species present, by use of HDD.

7.16.6 Waratah Bay woodland flora

The Waratah Bay woodland flora subgroup consists of the following species:

- **eastern spider orchid** (listed as endangered under the EPBC Act and FFG Act)
- **thick-lipped spider-orchid** (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)
- **leafy greenhood** (listed as vulnerable under the EPBC Act)
- **silver everlasting** (listed as endangered under the FFG Act)
- **lizard orchid** (listed as endangered under the FFG Act)
- **orange-tip finger-orchid** (listed as endangered under the FFG Act)
- **slender pink-fingers** (listed as vulnerable under the FFG Act)
- **spurred helmet-orchid** (listed as endangered under the FFG Act)
- **fringed helmet-orchid** (listed as endangered under the FFG Act)
- **currant-wood** (listed as endangered under the FFG Act)
- **cobra greenhood** (listed as endangered under the FFG Act)
- **rush lily** (listed as vulnerable under the FFG Act)
- **small fork-fern.** (listed as endangered under the FFG Act)

Waratah Bay woodland flora are considered likely to occur in the woodlands around Waratah Bay. However, due to the patchy nature of habitat along the project alignment, it is less likely that these species will be present in the AoD. Consequently, removal of vegetation is mostly along the edges of degraded patches of vegetation, fragmented patches and scattered trees. Without the implementation of EPRs, the project will lead to the removal of 1.27 ha of suitable growth and reproduction habitat for Waratah Bay woodland flora.

With the implementation of measures to avoid and minimise vegetation removal, less than 0.3 ha of habitat for the Waratah Bay woodland flora will be impacted. Successful implementation of the EPRs will reduce potentially major impacts to a manageable level of moderate.

7.16.7 River swamp wallaby-grass

River swamp wallaby grass (listed as vulnerable under the EPBC Act) occurs in the survey area in a small wetland adjacent to the Morwell River and may occur within minor drainage lines in unsurveyed areas south of Mirboo North. Prior to the implementation of measures to comply with EPRs, the project may lead to the removal of approximately 0.8 ha of suitable growth and reproduction habitat for River swamp wallaby-grass. Impacts include removal of habitat, degradation of habitat by releasing pollutants or sediments, introducing or spreading weeds and diseases, and changing surface water flows in wetland habitats.

With the successful implementation of measures to comply with the EPRs, habitat impacted by the project will be less than 0.4 ha. Successful implementation of the EPRs will reduce potentially high impacts to a manageable level of moderate.

7.16.8 Threatened eucalyptus species throughout the project alignment

The threatened eucalyptus species throughout the project alignment subgroup consists of Strzelecki gum (listed as vulnerable under the EPBC Act and critically endangered under the FFG Act), Yarra gum (listed as critically endangered under the FFG Act) and bog gum (listed as critically endangered under the FFG Act), which are present within the survey area. Yarra gum occurs in one patch within the Latrobe Valley, bog gum occurs in numerous patches in the southern area of the Tarwin Valley landscape region as well as Waratah Bay, and Strzelecki gum occurs as patches and scattered trees throughout the project alignment. Without the implementation of measures to comply with EPRs, less than 0.05 ha of habitat for threatened eucalyptus species may be impacted by construction activities. Direct construction impacts will likely include the direct 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.

With the successful implementation of measures to comply with the EPRs, impacts to habitat for these species can be avoided. However, there will be impacts to individual trees or groups. For the Yarra gum and Strzelecki gum, impacts will be to two and one tree respectively, and mitigation measures will reduce residual impacts to low. For the bog gum, multiple, large populations remain unsurveyed and without assessment of these populations so the feasibility and extent of avoidance cannot be assessed. Given this uncertainty, the residual impact is high, as multiple large, populations could be significantly impacted.

7.16.9 Strzelecki Ranges dry forest flora

The Strzelecki Ranges dry forest flora subgroup consists of cobra greenhood (listed as endangered under the FFG Act), bear's ear (listed as endangered under the FFG Act) and austral crane's-bill (listed as endangered under the FFG Act).

The terrestrial ecology assessment did not identify Strzelecki Ranges dry forest flora or Strzelecki Ranges damp or wet forest species during targeted surveys. However, as the species are inconspicuous, presence cannot be ruled out. However, based on the presence of sub-optimal nature habitat, it is considered unlikely the survey area supports these species.

7.16.10 Strzelecki Ranges damp or wet forest species

The Strzelecki Ranges damp or wet forest species subgroup consists of alpine sun-orchid (listed as critically endangered under the FFG Act), slender fork-fern (listed as critically endangered under the FFG Act) and oval fork-fern (listed as endangered under the FFG Act).

Strzelecki damp or wet forest species are considered likely to occur in forest habitats within the Strzelecki Ranges. Indirect construction activities may include removing habitat at the fringes of forests where these species are less likely to occur, as well as releasing dust, pollutants or sediment, and introducing weed species.

Without the implementation of measures to comply with EPRs, the project may lead to the removal of approximately 1.2 ha of suitable growth and reproduction habitat for the Strzelecki Ranges damp forest 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 0.7 ha. Successful implementation of the EPRs will reduce potentially high impacts to a manageable level of low.

7.16.11 Threatened fauna species in Victoria

Construction activities may directly impact fauna species, through the clearing of vegetation, vehicle collision, noise, vibration, light, dust, and the introduction of weeds or pest species. This section details the assessment of impacts to the following:

- Owls, raptors and other large mobile fauna
- Ground dwelling fauna
- Aquatic fauna
- Shorebirds
- Waterbirds and waders
- Woodland birds

Owls, raptors and other large mobile fauna

Owls, raptors and other large mobile fauna found in the study area comprise of the powerful owl (listed as vulnerable under the FFG Act), white-bellied sea-eagle (listed as endangered under the FFG Act), grey goshawk (listed as endangered under the FFG Act), grey-headed flying fox (listed as vulnerable under the EPBC Act and FFG Act) and lace monitor (listed as endangered under the FFG Act).

These species are likely to occur within high-quality woodland throughout the survey area. Direct construction impacts may include the removal of habitat, disturbance from noise and light pollution, and vehicle strikes. These species are highly mobile and have extensive range and availability of suitable foraging habitat throughout the region. Impacts are predicted to be minimal, and the assessment concluded the species are unlikely to be significantly impacted by the project.

Ground dwelling fauna

Ground dwelling fauna found in the study area comprises the swamp skink (listed as endangered under the EPBC Act and FFG Act), glossy grass skink (listed as endangered under the FFG Act), swamp antechinus (listed as vulnerable under the EPBC Act and FFG Act), white-footed dunnart (listed as vulnerable under the FFG Act) and southern toadlet (listed as endangered under the EPBC Act).

These species are likely to occur in scrub and woodland habitats around Waratah Bay and most of the AoD, for the project is located on the edge of this potential habitat. Direct construction impacts are largely limited to the removal of vegetation and disturbance from noise and light pollution. Indirect construction impacts include increasing the prevalence of pest species and edge effects from the removal of habitat. With the implementation of measures to comply with the EPRs, including minimising loss of habitat resources, it is expected that the area of habitat impacted by the project will be approximately 0.3 ha. Noise and light pollution will be minimised by implementing work restrictions and controls for works within 100 m of priority habitat. Given the high sensitivity of this species subgroup and the relatively small extent of habitat that may be impacted, the potential impact was assessed as moderate.

Aquatic fauna

Aquatic fauna found in the study area comprises the dwarf galaxias (listed as vulnerable under the EPBC Act and endangered under the FFG Act), flinders pygmy perch (listed as vulnerable under the FFG Act), growling grass frog (listed as vulnerable under the EPBC Act and FFG Act), Narracan burrowing crayfish (listed as endangered under the FFG Act), South Gippsland spiny crayfish (listed as endangered under the FFG Act) and platypus (listed as vulnerable under the FFG Act).

These species are known to occur or are considered likely to occur in ephemeral wetlands, dams and other aquatic habitats throughout the survey area. Direct construction impacts to priority habitat will largely be avoided as these habitats are in watercourses where trenchless construction methods (i.e., HDD) will be employed. Indirect construction impacts (i.e., releasing pollution or sediment into watercourses, introducing diseases or weeds into waterways) will be managed through measures to maintain landform stability, avoid or minimise erosion and sedimentation, and reduce light pollution and adverse effects to nocturnal species. With the successful implementation of measures to comply with the EPRs, impacts to these species' habitat can be avoided.

Shorebirds

Bird species predominately associated with shoreline habitats, have been grouped together under the collective terms of shorebirds. This grouping includes migratory shorebirds, resident shorebirds and sea birds such as terns and gulls, which regularly forage and roost in shoreline habitats.

Shorebirds found in the study area comprise of:

- **eastern curlew**
  (listed as critically endangered, marine and migratory under the EPBC Act and endangered under the FFG Act)
- **lesser sand plover**
  (listed as endangered, marine and migratory under the EPBC Act and endangered under the FFG Act)
- **greater sand plover**
  (listed as vulnerable, marine and migratory under the EPBC Act and endangered under the FFG Act)
- **fairy tern**
  (listed as vulnerable and marine under the EPBC Act and critically endangered under the FFG Act)
- **hooded plover**
  (listed as vulnerable and marine under the EPBC Act and vulnerable under the FFG Act)
- **sanderling**
  (listed as marine and migratory under the EPBC Act)
- **red-necked stint**
  (listed as marine and migratory under the EPBC Act)
- **double-banded plover**
  (listed as marine and migratory under the EPBC Act)
- **red-capped plover**
  (listed as marine under the EPBC Act)
- **Caspian tern**
  (listed as marine and migratory under the EPBC Act and vulnerable under the FFG Act)
- **little tern**
  (listed as marine and migratory under the EPBC Act and critically endangered under the FFG Act)
- **crested tern**
  (listed as marine and migratory under the EPBC Act)

The coastal habitat of Waratah Bay is high-quality habitat and may be used for nesting, refuge and foraging by shorebirds. The use of HDD will avoid direct impacts to these species' habitat at the shore crossing. Measures will

also be implemented to restrict works during sensitive life-stages (e.g. breeding, nesting, etc.) within 100 m of priority habitats, minimising the impacts of noise and light pollution. With the successful implementation of measures to comply with the EPRs, the residual impact to these species' is moderate. This rating is due to the sensitivity of one or more species within the subgroup.

Waterbirds and waders

Waterbirds and waders found in the study area comprises the Australasian bittern (listed as endangered under the EPBC Act and critically endangered under the FFG Act), cattle egret (listed as marine under the EPBC Act), Latham's snipe (listed as marine and migratory under the EPBC Act) and hardhead (listed as vulnerable under the FFG Act).

These species are known to occur or are considered likely to occur in ephemeral wetlands or dams within the survey area. Direct construction impacts will largely be avoided, as suitable habitats where these species are present or likely to be present, are in watercourses where trenchless construction methods will be employed. Indirect construction impacts may include releasing pollution or sediment into watercourses and altering behaviour patterns and changing faunal assemblages with noise and light pollution. With the implementation of measures to comply with EPRs, such as HDD, priority habitat will be reduced or avoided, and the residual impact was assessed as low.

Woodland birds

Woodland birds found in the study area comprises the gang-gang cockatoo (listed as endangered under the EPBC Act), blue-winged parrot (listed as vulnerable and marine under the EPBC Act), satin flycatcher (listed as marine and migratory under the EPBC Act) and rufous fantail (listed as marine and migratory under the EPBC Act).

These species are considered likely to occur in woodland and forest within the survey area. Direct construction impacts may include disturbance from noise and light pollution. Indirect construction impacts may include increasing the prevalence of pest species, the removal of key habitat resources such as open understorey vegetation, grassy habitat adjacent to woodlands and high tree cover, and reducing habitat connectivity. These species are highly mobile and suitable habitat is available throughout the region. Considering this, and the implementation of measures to manage the risk of spread and introduction of weeds, and minimise light and noise pollution, priority habitat will be reduced or avoided, and disturbance from noise and light will be minimal. With the successful implementation of measures to comply with the EPRs, the residual impact was assessed as low.

Threatened flora species in Heybridge, Tasmania

Three EPBC Act listed threatened flora species were identified during the desktop baseline assessment as potentially occurring within the survey area: tailed spider orchid (listed as vulnerable under the EPBC Act , hoary sunray (listed as endangered under the EPBC Act), and swamp fireweed (listed as vulnerable under the EPBC Act). However, a review of the current range and habitat requirements for these species found that they were not likely to occur due to the absence of suitable habitat within the survey area, and none were identified during field surveys. Therefore, these species are unlikely to be impacted by the project.

7.16.12 Threatened fauna species in Heybridge, Tasmania

Construction activities may impact fauna species through direct or indirection impacts through the clearing of vegetation, and vehicle collision, noise, vibration, light, dust, and the introduction of weeds or pest species. This section details the impacts to the following:

- **Tasmanian devil**
  (listed as endangered under the EPBC Act)
- **Spotted-tail quoll**
  (listed as vulnerable under the EPBC Act)
- **Tasmanian wedge-tailed eagle**
  (listed as endangered under the EPBC Act)

Mammals

The Tasmanian devil and Spotted-tail quoll 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 their presence in the surrounding areas.

The impact assessment identifies roadkill as a potential impact to these species, and measures will be implemented to reduce the impacts of construction traffic on these species, including 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.

Raptors

The assessment identified the potential for the Tasmanian wedge-tailed eagle 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. Inspections will be undertaken during construction to confirm if new nest are established. Overall, with the implementation of measures to comply with EPRs, the project is unlikely to have a significant impact on the species.

7.16.13 Operation

Potential project impacts to terrestrial ecology values during operation are expected to be low or negligible. This due to the greatest impacts of removal or degradation of native vegetation and habitat occurring during project construction. Other potential impacts that could occur during operation include fauna collisions, spreading of weeds and pathogens, or impacts due to light and noise generate by above ground project components and operational vehicles.

These impacts will be on a much lesser scale than during the construction phase due to the low amount of project related traffic during operation. Emissions of light, and noise will be addressed during design development. Together with the study area consisting of a largely modified landscape, the project operation will not have a material impact on ecological values.

7.17 Bushfire

Bushfires are a natural part of the Australian landscape, and many ecosystems have evolved to be fire dependent. There have been no historic bushfire events recorded at the Waratah Bay or Hazelwood project sites, however the project alignment passes through bushfire prone areas and sites of historical fires in Gippsland. Understanding bushfire impacts is important to identify risks to people, property and the environment.

A risk assessment approach was adopted to assess the potential impacts the project could have on bushfire management within and in proximity to the study area. The assessment also assessed the risks posed to the project from bushfire with consideration of landscape factors (i.e., fuel type, topography, fire history, land use, and opportunities for fire detection and suppression).

The bushfire assessment considered several worst-case bushfire scenarios, to determine the level of risk of bushfire exposure for the project. The greatest potential for bushfire events in the study area is associated with the bushfire season, which coincides with strong north to north-west and south-west winds, together with low rainfall and drought conditions.

During construction and operation, the risks to life and property assets were assessed as minor or insignificant due to the temporary nature of construction works, and the relatively low and dispersed human population and built assets in the study area. While the consequence of impacts to life from a bushfire can be catastrophic, the likelihood of a fire spreading across this landscape and having an impact on life is reduced.

The Driffield area has the highest occurrence of bushfires historically across the study area. The likelihood of bushfires occurring in this area would be higher due to the history and fuel loads. The impact to life has been assessed as insignificant to minor in this area because of the relatively low and dispersed human populations located near to the plantations and forested areas. The adjacent land is also generally cleared for agricultural purposes and maintaining low fuel hazard loads. The established road network in the area also offers increased opportunities to contain a bushfire moving through the landscape and provides for access of emergency services. As such, the likelihood of a bushfire spreading and the subsequent consequence of impacts to life is reduced.

The risks of impact to project assets are assessed as minor to insignificant. This is because of the existing bushfire hazard context, landscape profile and project siting of above ground elements in areas with no history of bushfires. The effective implementation of measures to comply with the EPRs will lower the minor risks of impact to insignificant.

The EPRs require measures to avoid ignition of fires during construction and operation, maintaining onsite firefighting water capacity in high-risk areas, and developing a bushfire emergency management plan with the aim of preventing injuries or fatalities in the event of a bushfire.

7.18 Aboriginal cultural heritage

Boonwurrung Land and Sea Council, Bunurong Land Council Aboriginal Corporation and GunaKurnai Land and Waters Aboriginal Corporation are the Traditional Owners (TO) groups with connection to Country in the study area. Consultation and engagement has been ongoing with each TOs through the project development and preparation of the impact assessments. MLPL will continue to engage with First Peoples in Victoria and the Tasmanian Aboriginal Community throughout delivery of the project.

There are both tangible and intangible Aboriginal heritage values that may be impacted by the project. Project activities that disturb the ground have the potential to impact tangible Aboriginal cultural heritage values such as artefact scatters, low density artefact distributions and ochre quarries.

Intangible cultural heritage refers to cultural practices, oral traditions and language, skills, techniques and knowledge including dance, stories, crafts, medicines and designs. Aboriginal intangible heritage is communicated from generation to generation and provides communities and individuals with a sense of identity and continuity. CVAs are being prepared with TOs in Victoria to provide a holistic understanding of the nature, location of tangible and intangible cultural values and how these may be impacted by the project. The CVAs will inform the preparation of the two CHMPs being prepared for the project.

An initial assessment of tangible cultural heritage values has been completed with a desktop assessment, ground surveys and subsurface testing completed where properties could be accessed. Further subsurface testing will be completed to inform the CHMPs.

Twenty-eight known known Aboriginal cultural heritage values (places and artefacts) were identified that may be impacted by project activities. These include, one artefact scatter/ochre quarry, ten artefact scatters and seventeen low-density artefact distributions. Project construction has the greatest potential for significant impacts on cultural heritage values, as this phase has the greatest level of ground disturbance. There is less potential for significant impacts during operation and decommissioning, as construction activities will have already disturbed the area.

Fifteen tangible heritage values have been assessed as having a moderate residual impact from ground disturbance, due to the sensitivity of the value impacted. These values include artefact scatters, low density artefact distribution and an ochre quarry. Measures to manage impacts to these sites will be documented in the CHMPs to be approved by GLaWAC and FPSR. Measures may include collection or salvage of artefacts by qualified archaeologists prior to disturbance of the area. Once the findings of the CVA program are incorporated into the CHMPs, mitigation measures are expected to be included for intangible cultural heritage. Management conditions and contingency responses for unknown cultural heritage will mitigate or avoid potential impacts to any unidentified values.

7.19 Non-Indigenous cultural heritage

The non-indigenous cultural heritage assessment and archaeological ground survey identified a single non-Indigenous cultural heritage site, a brick cistern near the Buffalo township. The brick cistern is located outside the construction area, however, is within 50 m of the edge of the construction area and access road.

A cistern is a buried tank, commonly made of brick or metal. Brick cisterns were used for water storage and have been recorded in Australia as early as the 1870s. Up until the early 20th century these cisterns were prevalent when connections to town water supplies were established.

The cistern was determined to have a moderate cultural heritage significance based on:

- Low historical value given it is not associated with any historical event, person or theme.
- High scientific value as it is one individual site with limited diversity, in relatively excellent condition, and is assessed to have a rare representativeness.
- Low social and spiritual value as it does not appear to have any clear social or spiritual connection at a local, state, or national level.

A buffer area to protect the brick cistern site will be maintained during all project phases to prevent impacts to the brick cistern. Contractors and employees will undertake cultural awareness training to further protect the site. A historical heritage management plan will be prepared for the project which will include a protocol for managing unexpected finds along the project alignment, including archaeological features associated with the brick cistern.

7.20 Land use and planning

Land use impacts can occur when project activities influence the form, ongoing function, amenity, or appearance of the existing environment or the character of a place or location. The existing land use in the study area is a combination of agriculture, forestry, conservation, tourism and rural living.

The project will be located in the municipal areas of the Latrobe City Council and South Gippsland Shire Council and is therefore subject to the Planning Schemes and policies of each Council. The land use and planning assessment considered the potential effects of the project on existing land uses and the consistency of the project with planning and land use policy.

A 20 to 36 m wide construction corridor is required for the project alignment, haul road, minor laydown areas and temporary facilities to support construction. Approximately seven larger laydown areas adjacent to the construction corridor may also be required to support construction. The project alignment and area of disturbance has been located to avoid dwellings, commercial buildings, and rural industry infrastructure, and to minimise impacts on agricultural and forestry properties. To minimise disturbance to sensitive environments, the width of the construction area has been reduced to 20 m in some locations. Further refinement of the alignment is likely to occur during the detailed design stage, which may reduce the area of disturbance and extent of land temporarily occupied for the construction.

Sensitive land uses including residential dwellings and tourism and recreational land uses have been avoided, where possible, by route selection and alignment refinement. Disruptions to amenity and activities caused by project construction will be localised to the specific area of construction and largely not persist after construction activities have been completed. Permanent change in land use would occur at the site for the transition station at Waratah Bay and converter station in Hazelwood that are currently agricultural land. Growing plantation forests in the 20 m wide project easement will also be prohibited but movement of forestry equipment and other activities will be permitted. These losses are minor in the context of the region's agriculture and forestry landholdings and will not affect the viability of these industries.

With the implementation of measures to comply with EPRs to mitigate impacts on amenity conditions, construction is not expected to impact the viability of land uses. The impacts to other infrastructure are largely associated with the construction phase and will be managed through appropriate design and construction measures, in accordance with the infrastructure owner requirements.

The planning policy in Gippsland supports the use of energy resources and associated infrastructure. The project is broadly consistent with planning and land use policy, and therefore the residual impacts of the project on land use as prescribed by strategic planning policy are assessed as being low.

The operation of the project will result in some changes to the existing land use within the 20 m easement due to some change to the existing use at locations where above ground infrastructure is proposed, and in plantation areas. With the effective implementation of measures to comply with the EPRs, existing land uses will be able to continue during construction with only brief, localised disruptions, and, following these, largely can recommence these existing land uses. The land use residual impacts were assessed to be negligible to low.

7.21 Social (Victoria and Tasmania)

Social impacts occur where the project affects a socio-economic characteristic of the people within the study area. The social impact assessment (SIA) considered the impacts and benefits of the project in both Victoria and Tasmania on people's community identity, economy and livelihoods, infrastructure and services, and people's productive capacity. The outcomes of the SIA will assist in developing the project in a socially responsible and sustainable manner, considering the perspectives and concerns of affected stakeholders.

Many of the social impacts identified have been discussed in the discipline specific studies, such as impacts to native vegetation, amenity, traffic, and cultural heritage. The social impact assessment considers the same impacts in the context of what the community values, resulting in different impact ratings in some cases. The measures implemented to address impacts identified by each study will therefore address social impacts.

Construction activities may lead to temporary changes to visual amenity, changes to the road network, impair access to recreational areas and lead to changes to the noise environment and dust generation. The aspects inform the assessment of impact to community identity. These changes may temporarily impair residents' enjoyment of their properties and activities undertaken within them, and for some, it may be disruptive or annoying. 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 project will result in both positive and negative impacts for economy and livelihood. Potential negative impacts affect the affordability and availability of housing, as the rental vacancy rates in several suburbs in the study area are below 1% and the project has the potential to increase the pressure on housing. The influx of workers for the project has the potential to put additional pressure on the region's infrastructure and services. There is a potential for a cumulative impact on rental housing, particularly regarding availability and affordability for very low and low-income households. A workforce and accommodation strategy will document measures to address cumulative impacts on accommodation and health services due to other large-scale construction and infrastructure projects. Collaborative efforts between government and industry are needed to manage accommodation for the regional workforce and mitigate the cumulative impact on rental housing.

For some landholders, residents, and stakeholders, the project's planning, construction and operation has the potential to impact people's productive capacity to participate in society and its economy by causing anxiety, stress and frustration. The project requires an investment of landholders' time, for example, at community consultation events or during site visits on their properties if the project alignment is to cross their land.

Prior to commencement of project works, MLPL will implement a social impact management plan detailing key strategies (i.e., workforce and accommodation strategy, health services, community benefits sharing program) and their objectives for managing social impacts and the responsibilities for implementation. The development and implementation of a community and stakeholder engagement framework will outline the approach to engagement with community, stakeholders and First Peoples. This will include the development of complaints policies and management procedures. The social impact management plan will also include strategies to manage ongoing cumulative impacts of projects in the region.

Economic modelling has predicted the project will provide direct and indirect employment opportunities throughout all phases of the project in Victoria and Tasmania. MLPL is developing and will implement an industry participation plan to stimulate entrepreneurship, business and economic development, providing First Peoples and vulnerable groups with more opportunities to participate in the economy. The project will also facilitate investments in community infrastructure and services, improving community health and wellbeing.

7.22 Decommis-sioning

Decommissioning activities will be planned and carried out in accordance with regulatory and landholder requirements at the time of decommissioning. A decommissioning plan for the Victorian, Tasmanian and marine components of the project will be prepared prior to planned end of service and decommissioning of the project, with approval sought under the relevant legislation at the time.

The key objective for decommissioning will be to leave a safe, stable and non-polluting environment and avoid or minimise impacts where infrastructure is removed.

The decommissioning management plan must identify above-ground and below-ground infrastructure proposed to be removed or left in situ and assess potential impacts of decommissioning activities for the removal or retention of infrastructure (if required). Measures to avoid or reduce impacts from the removal or retention of infrastructure will be documented in the decommissioning management plan.

The decommissioning management plan must meet the relevant requirements of legislation and guidelines at the time of decommissioning, and be implemented during decommissioning.

7.23 Cumulative impacts

Cumulative impacts are those that 'result from the successive, incremental, and/or combined effects of an action, project or activity when added to other existing, planned and/or reasonably anticipated future ones' (IFC, 2013). To assess the cumulative impacts of the project, other relevant projects that could credibly contribute to cumulative impacts due to the location and timeframe coinciding with Marinus Link were identified. Relevant projects are listed below and shown in Figure 8:

- **Delburn Wind Farm**
- **Star of the South Offshore Wind Farm**
- **Offshore wind development zone in Gippsland**
- **Yolla Infield Well Project BassGas Project**
- **Hazelwood mine rehabilitation project**
- **Wooreen Energy Storage System**
- **North West Transmisson Developments**
- **Guildford Wind Farm**
- **Robbins Island Renewable Energy Park**
- **Jim's Plain Renewable Energy Park**
- **Robbins Island Road to Hampshire Transmission Line**
- **Bass Coast Highway upgrades between Cooee and Wynard**
- **Hellyer Wind Farm**
- **Table Cape Luxury Resort**
- **Youngmans Road Quarry**
- **Port Latta Windfarm**
- **Port of Burnie Shiploader Upgrade**
- **QuayLink – Devonport East Redevelopment**

Each technical specialist determined whether there is potential for cumulative impacts to the values being assessed in their study. Cumulative impacts of relevant projects were then assessed based on publicly available information on the relevant projects. Table 51 summarises the cumulative impacts identified where additional mitigation (incorporated into EPRs) is required to reduce impacts.

Summary of cumulative impact assessment

Project	Cumulative impacts	Additional mitigation
Hazelwood mine rehabilitation project	Additional sources of dust emissions from establishment of agricultural hub near the Marinus Link converter station at Hazelwood and project alignment east of Driffield.	Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.
Gippsland projects, Victoria ◊ Hazelwood mine rehabilitation project ◊ Delburn Wind Farm ◊ Offshore Wind Farm zone ◊ Wooreen Energy Storage System ◊ Yolla Infield well Bass gas project	Demand and competition for skilled labour resources may impact industries requiring similar skill sets. The project workforce will contribute to the demand for health and emergency service providers, which may compromise the service provided to the existing regional population.	Workforce and accommodation strategy to include mitigation measures to address cumulative impacts. Social impact management plan to include mitigation measures to address cumulative impacts to health and emergency services
	Increase in demand for rental housing during construction with availability already constrained throughout the region.	Workforce and accommodation strategy to include mitigation measures to address cumulative impacts.
North west Tasmania projects ◊ North West Transmisson Developments ◊ Guildford Wind Farm ◊ Robbins Island Renewable Energy Park ◊ Jim's Plain Renewable Energy Park ◊ Robbins Island Road to Hampshire Transmission Line ◊ Bass Coast Highway upgrades between Cooee and Wynard ◊ Hellyer Wind Farm ◊ Table Cape Luxury Resort ◊ Youngmans Road Quarry ◊ Port Latta Windfarm ◊ Port of Burnie Shiploader Upgrade ◊ QuayLink – Devonport East Redevelopment	The cumulative impact of the project workforce will contribute to the demand for rental housing in northern Tasmania and exacerbate existing rental availability and affordability issues, which will affect very low and low-income households disproportionally.	Workforce and accommodation strategy to include mitigation measures to address cumulative impacts.
	The demand and competition for skilled labour resources may impact industries requiring similar skill sets and potentially draw from other industries and local businesses in northern Tasmania.	Social impact management plan to include mitigation measures to address cumulative impacts.
	The cumulative impact of increased construction workforce on demand for childcare providers, compromising service provision to the existing local and regional community.	Social impact management plan to include mitigation measures to address cumulative impacts.

Location of relevant projects considered in cumulative impact assessment

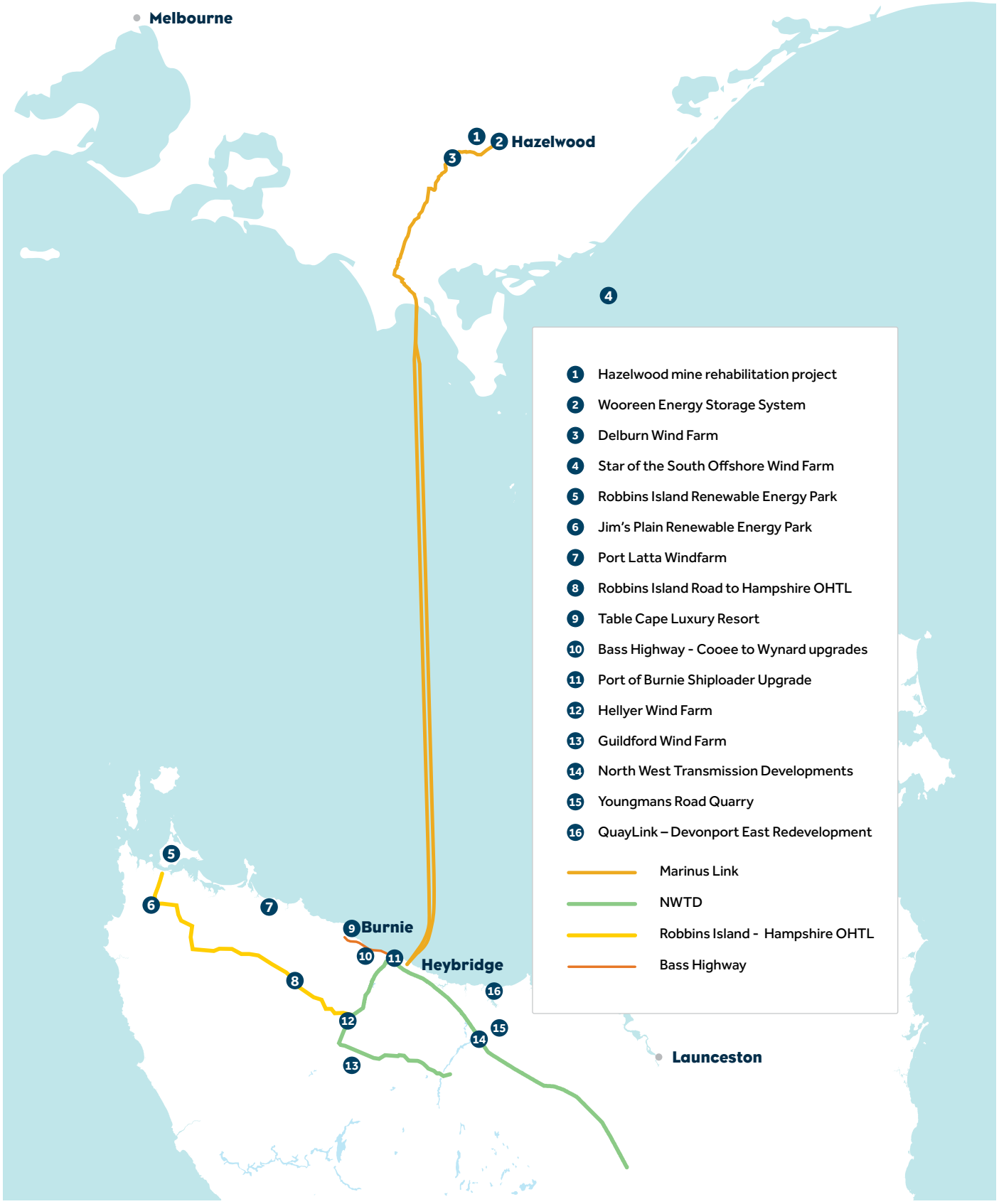


Figure 8 Location of relevant projects considered in cumulative impact assessment

8. Environmental Management Framework

An Environmental Management Framework (refer to Volume 5, Chapter 2 - Environmental Management Framework) has been developed for the project to provide a transparent governance framework for the management of environmental impacts from the project to meet Victorian and Commonwealth environmental statutory requirements, achieve necessary environmental outcomes, protect environmental values and sustain stakeholder confidence.

The Environmental Management Framework sets outs the requirements and accountability of MLPL and its principal contractors for environmental compliance throughout the project. MLPL will monitor compliance with the Environmental Management Framework and EPRs through the implementation of an Environmental Management System (EMS), developed in accordance with AS/NZS ISO 14001:2016 Environmental Management Systems.

Key elements of the Environmental Management Framework are:

- EPRs that set out the environmental outcomes to be achieved for the project.
- Establishment of an EMS certified to AS/NZS 14001:2016 by MLPL and each principal contractor for the project.
- Secondary consents required by the proposed draft PSA including the Environmental Management Framework, and the Alignment Plans and Development Plans that will reflect the final design developed to comply with the EPRs.
- Obtaining approval from the Victorian Minister for Planning for Alignment Plans and Development Plans (as required in the draft PSA and Incorporated Document). These plans will include the final project alignment, converter station design and transition station design (if required).
- Preparation of management plans with an overarching construction environmental management plans (CEMP) for the converter stations (terrestrial) and cables (marine and terrestrial) supported by sub plans (as required in the EPRs).
- Preparation and implementation of operations environmental management plans (OEMP) for the converter stations (terrestrial) and cables (marine and terrestrial).
- Establishing requirement for development and implementation of marine and terrestrial decommissioning management plans (DMPs).
- Regular monitoring, review, inspection, auditing and reporting of environmental performance during construction and operation.
- Engaging an IEA to review the CEMPs and sub plans to confirm they are consistent with the Environmental Management Framework and EPRs. The IEA will also audit principal contractors and MLPL during construction and report on environmental performance as well as compliance with project approvals, the CEMP and its subplans.

As the approval holder, MLPL is responsible for compliance with approval requirements and the Environmental Management Framework.

An overview of the Marinus Link Environmental Management Framework for the Victorian and Commonwealth jurisdictions, which applies to project components located on land and in the marine environment, is provided in Figure 9.

There will be multiple principal contractors and sub-contractors involved in the delivery of the different project components. Each contractor must comply with the Environmental Management Framework, EPRs and project approvals as relevant to their scope and location of project works.

Plans required to comply with project approvals, may be prepared in stages by each principal contractor. However, these plans must be in place prior to the commencement of project works of that stage. .

Compliance with the Environmental Management Framework and EPRs will be enforced through the contractual requirements for the construction and operation of the project, and during construction will be verified, audited and reported on by the IEA.

The Environmental Management Framework outlines the responsibilities of:

- The regulators in consideration and assessment of the EIS/EES;
- MLPL in securing the primary project approvals and developing the Environmental Management Framework and EPRs; and
- The principal contractors during construction and operation in accordance with Environmental Management Framework, EPRs, CEMP and OEMP.

8.1 Change management

A performance-based approach has been adopted for the 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. Changes to project design may arise due to refinement of design and construction methods by the principal contractors, outcomes of landholder engagement, results of further geotechnical assessments, or unanticipated finds during construction.

Changes to project design will be managed through a clear and transparent process that requires:

- ◊ Compliance with EPRs.
- ◊ Agreement with the relevant landholder.
- ◊ Assessment of changes in environmental impacts and consideration whether there is a material increase in adverse impacts compared with the EIS/EES assessment.
- ◊ Preparation of a report documenting the reasons for the change and the outcomes of the impact assessment.
- ◊ Consultation with relevant government agencies if a material change in adverse impacts is identified, to confirm the appropriate environmental impact assessment process and approval requirements for the change.
- ◊ If it can be demonstrated that there is no material change in adverse effects, seek approval from the Minister for Planning for amendments to Alignment Plans or Design Plans.

Changes to documentation and management plans will be reviewed and approved by MLPL and the IEA, where major changes are proposed. Where required in the Environmental Management Framework or project approvals, regulator approval of changes to documents will also be sought.

8.2 Evaluating compliance

Compliance with the Environmental Management Framework, EPRs and project approvals will be monitored, audited and reported on. MLPL and its principal contractors will have responsibilities to evaluate compliance during design development, construction, operation and decommissioning. The IEA will have a role in evaluating compliance with EPRs relevant to the CEMP during design and construction.

Evaluating compliance will consider:

- ◊ Compliance with the requirements of the Environmental Management Framework, project approvals and key plans including the CEMP and OEMP.
- ◊ Effectiveness of mitigation measures to achieve EPRs considering the types of mitigation the measures, how widely they are used in environmental management, the complexity of mitigation measures and the level of uncertainty about the effectiveness of measures.
- ◊ How corrective actions have been applied after an incident or non-conformance with the Environmental Management Framework and EPRs, and any improvements implemented as a result.
- ◊ Records and monitoring to demonstrate that EPRs and project approvals are met during delivery of the project.

The Marinus Link EMS will also outline the process for monitoring compliance with project approvals and EPRs, and for continual improvement. The process for continual improvement will consider available information such as contractor reporting, inspection outcomes, monitoring results, incident management, complaints received and how they were resolved.

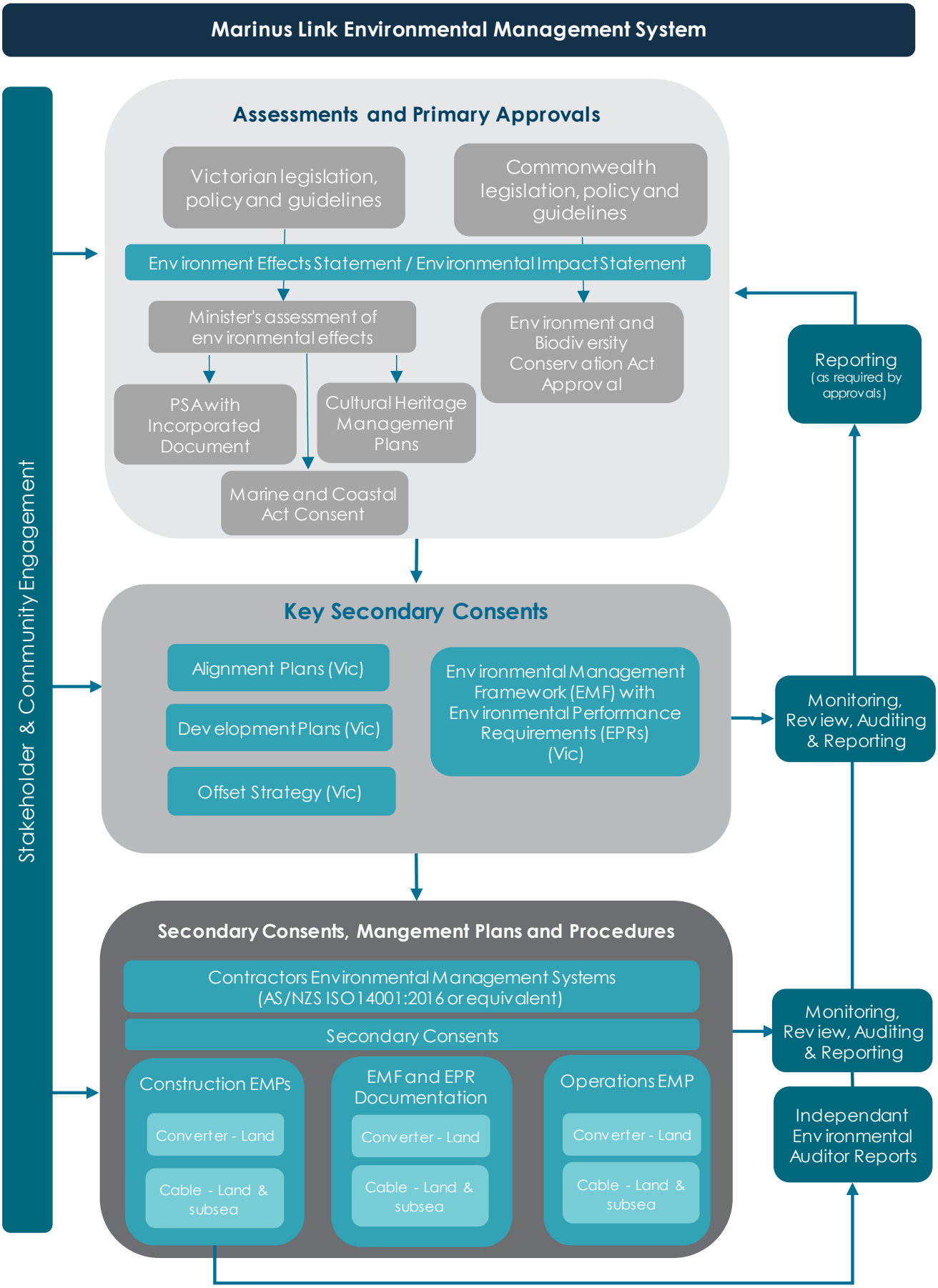


Figure 9 Marinus Link Environmental Management Framework

9. Next steps

The EIS/EES and draft PSA will be on public exhibition for 30 business days so that the community can view the documents and make written submissions. The duration will cover the requirement for 30 business days of exhibition for the EES and 20 business days for the EIS.

9.1 Reviewing the EIS/EES and making a submission

The EIS/EES documents and the draft PSA are now available to read and download, free of charge, at marinuslink.com.au/assessment.

The full EIS/EES and the draft PSA will be made available in hard copy at the following locations during the exhibition period:

- **Burnie Future Energy Hub** - 1 to 3 Spring Street, Burnie TAS 7320
- **Marinus Link Traralgon Office** - 28-30 Kay Street, Traralgon VIC 3844
- **State Library of Victoria** – 328 Swanston Street, Melbourne VIC 3000

Selected information of the EIS/EES and the draft PSA will be made available in hard copy at the following locations during the exhibition period:

- **Churchill Community Centre** - 9/11 Phillip Parade, Churchill 3842
- **Latrobe City Council Offices** - 141 Commercial Road, Morwell 3840
- **Mirboo North Library** - 34 Ridgway, Mirboo North 3871
- **Sandy Point Community Centre** - Church Parade, Sandy Point 3959
- **South Gippsland Shire Offices** - 9 Smith Street, Leongatha 3953
- **Traralgon Library** - 32 Kay Street, Traralgon 3844

For those who may have accessibility issues, or where electronic options are impracticable, hard copies of some documents, or other assistance, may be requested by phoning Marinus Link on 1300 765 275 or emailing team@marinuslink.com.au.

Please note, the EIS/EES is a large document, and we encourage the use of electronic versions.

To make a submission visit:
engage.vic.gov.au/MarinusLink-IAC

9.2 Inquiry and Advisory Committee process

The Minister for Planning will appoint an independent EES Inquiry and Advisory Committee (IAC) to advise on the effects of the project on the Victorian environment. The IAC would have regard to the EIS/EES, the proposed PSA and all written submissions received.

The IAC will conduct a public hearing to hear from the proponent and submitters who want to be heard in regard to their written submission. The proponent and submitters who want to be heard may present expert witnesses.

The duration of the hearing will be dependent on the number of submissions received and how many submitters want to be heard and present to the IAC. After the completion of the hearings, the IAC will submit a report to the Minister for Planning for consideration.

9.3 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 taken to address them.

Following receipt of the Victorian Minister for Planning's Assessment and 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.

9.4 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 will be acceptable, MLPL will then obtain the necessary statutory approvals required for the project, as outlined in Volume 1, Chapter 4 – Legislative framework.

Following receipt of the Minister's Assessment, MLPL will 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.

MARINUS LINK

Contact us

Visit: marinuslink.com.au

Emai: team@marinuslink.com.au

Call: 1300 765 275

Interpreter

If you require an interpreter, contact TIS National on 131 450 and ask to be connected to Marinus Link.