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

REFERRAL FORM

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

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

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

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

In completing a Referral Form, the following should occur:

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

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

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

Postal address

Minister for Planning
PO Box 500
EAST MELBOURNE VIC 8002

Couriers

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

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

PART 1 PROPONENT DETAILS, PROJECT DESCRIPTION & LOCATION

1. Information on proponent and person making Referral

Name of Proponent:	Marinus Link Pty Ltd
Authorised person for proponent: **Position:** **Postal address:** **Email address** **Phone number:** **Facsimile number:**	Seán Mc Goldrick Director, Marinus Link Pty Ltd 1-7 Maria Street, Lenah Valley TAS 7009 ceo@tasnetworks.com.au 1300 137 008 Not applicable
Person who prepared Referral: **Position:** **Organisation:** **Postal address:** **Email address:** **Phone number:** **Facsimile number:**	Kate Guard Environment and Planning Lead – Marinus Link Tasmanian Networks Pty Ltd (TasNetworks) 1-7 Maria Street, Lenah Valley TAS 7009 kate.guard@tasnetworks.com.au 0474 889 130 Not applicable
Available industry & environmental expertise: (areas of 'in-house' expertise & consultancy firms engaged for project)	**Marinus Link Pty Ltd – proponent.** Subsidiary of Tasmanian Networks Pty Ltd (TasNetworks) the State-owned transmission network service provider and distribution network service provider for the Tasmanian electricity system. **Consultants** • Tetra Tech Coffey (environmental impact assessment and approvals specialists) • Eco Logical Australia (terrestrial ecology and cultural heritage) • EnviroGulf Pty Ltd (marine ecology and resource use) • CEE Pty Ltd (benthic ecology) • Cosmos Archaeology (maritime heritage and archaeology)

2. Project – brief outline

Project title: Marinus Link

Project location: (describe location with AMG coordinates and attach A4/A3 map(s) showing project site or investigation area, as well as its regional and local context).

Marinus Link is a proposed underground and subsea electricity interconnector between Victoria and Tasmania with expected capacity of 1500 megawatt (MW) (shown in Figure 1). The project consists of two 750 MW cables.

The portion of Marinus Link applicable to this referral is a subsea cable from three nautical miles (3NM) off Waratah Bay, with a shore crossing, a transition station at Waratah Bay, and underground cable continuing north approximately 90 km through the Gippsland region to the Latrobe Valley in Victoria (Figure 2).

A proposed converter station site is expected to be located in the greater Hazelwood area of the Latrobe Valley, where the interconnector will connect into the existing Victorian network. Potential converter station sites are being investigated adjacent to the existing Hazelwood Terminal Station and in the Driffield area (Figure 2).

Short project description (few sentences)**:**

Marinus Link is a proposed underground and subsea electricity interconnector between Victoria and Tasmania with expected capacity of 1500 MW (see Figure 1). It will increase energy exchange throughout the National Electricity Market (NEM), as Australia continues its transition to cleaner energy. Marinus Link will also incorporate a significant optical fibre capacity, strengthening telecommunications and data connectivity between Victoria and Tasmania.

The project consists of approximately 250 km of subsea high voltage direct current (HVDC) cables and 90km of underground land cable between Heybridge in North West Tasmania and the Latrobe Valley in Victoria, with a converter station at each end. The project is proposed to be built in two 750 MW capacity stages, with the land cables for each stage located within a common easement.

While the project spans Tasmanian, Commonwealth and Victorian territories, this referral has been made only for those portions within Victorian territory from 3NM off the coast of Waratah Bay through to Hazelwood. Separate approvals are being sought from the Tasmanian and Commonwealth governments for the remaining project components.

3. Project description

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

As coal-fired power generation continues to retire, variable renewable energy generation such as large scale wind and solar is increasingly taking its place. To support these variable energy sources, the NEM also needs energy capacity that is available on-demand, known as ‘dispatchable’ energy, from forms such as batteries, pumped hydro long duration energy storage and existing hydroelectricity resources.

The aim of Marinus Link is to support Victorian and Tasmanian renewable energy development and the transition to renewable energy baseload by providing greater market access to Tasmania’s world class wind and hydro power, and proposed pumped hydro long duration energy storage resources. By increasing energy exchange between Victoria and Tasmania, Marinus Link is expected to unlock renewable energy generation opportunities and cost-effective energy storage, and support affordable, reliable and clean energy across the NEM.

Marinus Link is proposed to deliver an additional 1500MW capacity connection between Victoria and Tasmania which will more than triple the capacity currently provided by Basslink (the existing undersea connection across Bass Strait), bringing the total dispatchable energy between Victoria and Tasmania to around 2000MW.

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

Tasmania's participation in the NEM and the associated energy trading is made possible by an existing 600 MW HVDC interconnector between Victoria and Tasmania (Basslink). Available capacity on the interconnector is highly utilised to export renewable generation and import low cost baseload power to Tasmania.

Tasmania has significant renewable energy resource potential, particularly hydroelectric power and wind energy. The potential size of the resource exceeds the Tasmanian electricity demand as well as the capacity of the existing interconnector. The growth in renewable energy generation in mainland states participating in the NEM, together with the reduced use of coal-fired generators is reducing the availability of dispatchable energy.

Tasmania's existing and potential renewable resources are a valuable source of dispatchable generation that could benefit electricity supply in the NEM. A second interconnector between Tasmania and Victoria will facilitate these opportunities.

The proposed route for Marinus Link presented in this referral is the culmination of a comprehensive route and site selection process that has considered technical, environmental, cultural and social constraints. The route and site selection process completed (as at December 2020) for the project is outlined in Attachment 1. Avoidance of significant impacts on existing infrastructure, environmentally sensitive areas (including threatened species habitat and threatened ecological communities) and land use were key objectives of route selection.

As outlined in Attachment 1, potential shore crossing locations and converter station sites were identified and evaluated before identifying prudent and feasible cable routes within each corridor. In some instances, several routes were identified. These prudent and feasible routes were evaluated against the route and site selection criteria (detailed in Attachment 1) to identify the least constrained route/s. Detailed desktop studies, ground-truthing and a marine geophysical reconnaissance survey informed selection of the least constrained route. The least constrained route/s were subject to detailed review and refinement to address recommendations from the initial investigations and an engineering review to identify the 'proposed route'.

The capacity of Marinus Link (expected 1500 MW) constrains options for connecting the Tasmanian and Victorian transmission networks. In Tasmania this is the 220 kV network and in Victoria, the 220 kV or 500 kV network. In Victoria, feasible connection points were identified from Portland in southwestern Victoria to the Latrobe Valley in Gippsland including those facilitated by replacement and/or upgrade of the 220 kV network. Given the existing Hazelwood Terminal Station is a strong node in the Victorian transmission network, with four single-circuit 500 kV overhead transmission lines running from the Latrobe Valley to Melbourne in two separate corridors to the southeast and northeast of Melbourne, the greater Hazelwood area was chosen as the favourable grid connection point.

The use of underground HVDC cabling technology for the onshore cable component of Marinus Link within Victoria means that terrain and topographic features are significant factors in route selection and refinement. The Hoddle and Strzelecki ranges pose significant constraints to route selection due to the deeply incised valleys and steep slopes.

The proposed route for Marinus Link in Victoria (subject of this referral) is shown in Figure 2. The proposed route will be refined and finalised following further environmental investigation and consultation.

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

The preferred technology for Marinus Link is two 750 MW symmetrical monopoles using ±320 kV, cross-linked polyethylene (XLPE) insulated cables and voltage source converter (VSC) technology. Each symmetrical monopole will comprise two identical size power cables and a fibre-optic communications cable.

The main components of the project within the jurisdiction of the Victorian government (shown in Figure 2), includes:

- Two subsea cables from the edge of Victorian coastal waters (3 nautical miles offshore) to Waratah Bay.
- Shore crossing at Waratah Bay.
- A potential transition station located in farmland approximately 1 km behind the coastal reserve.
- Underground (land) cables in trenches.
- A converter station located in the greater Hazelwood area.

These components are described further in the following sections.

Subsea cables

Two 750 MW subsea cables will traverse Bass Strait to Waratah Bay, separated by 2 km in Bass Strait, with that separation reducing to a maximum of 130 m in Victorian waters (see Figure 1).

Shore crossing

A single shore crossing is proposed in Victoria. It is proposed the shore crossing will be constructed using horizontal directional drilling (HDD), which will extend up to 1 km offshore from the transition station or 10 m water depth. The intention of this approach is to avoid or reduce impacts to sensitive coastal dune habitats at Waratah Bay.

Preliminary investigations indicate HDD from farmland behind the coastal reserve is expected to be feasible for the Victorian shore crossing at Waratah Bay. An indicative shore crossing construction method is shown in Plate 1.

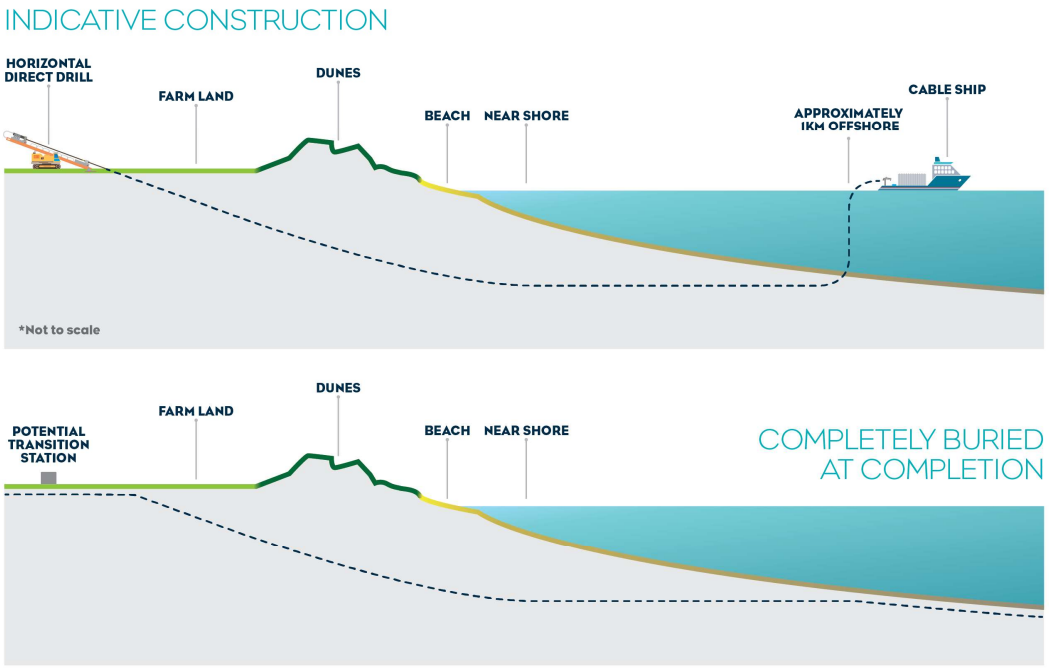

Plate 1: Indicative shore crossing construction

Transition station

A transition station is likely to be required to join the subsea and land cables, as subsea cables have a different type of insulation and protection from land cables and are not suitable for onshore installation. It is possible that a single type of cable could be used for both land and sea components, in which case a transition station will not be required.

If required, the transition station will be constructed onshore to connect the subsea HVDC cable with the underground land HVDC cable (see Plate 1). The specific location and details of the transition station are being developed, however it is likely to be a site/compound of approximately 70 m by 50 m in size, containing structures similar to shipping containers of a height in keeping with the adjacent building (less than 3 m).

Land cables
Each 750 MW stage of Marinus Link is proposed to consist of two bundled HVDC land cables, which will be laid in separate trenches. Trenches will be a nominal width of 1 m and minimum depth of 1.5 m. The land cables will be directly laid in the trenches or installed in conduits in the trenches.

A linear strip of up to 36 m wide (minimum 20 m wide) will be disturbed in laying the land cables, within which a permanent 20 m-wide easement will be established to protect the two stages of Marinus Link, with an allowance for future cable replacement and/or additional capacity (subject to future approval). For particular construction features, such as HDD drill pads, the disturbance area will be wider than 36m.

Temporary access and temporary laydown areas will be required. Where possible existing roads and tracks will be used for access; for example, farm access tracks or plantation forestry tracks.

Converter station
The converter station compound will have a nominal footprint of 260 m by 230 m. It will likely comprise transformers, switchgear, closed stormwater runoff systems with oil inceptors, a control room and a large building containing the HVAC/HVDC converter technology. A larger area of up to 16 ha is required to construct the converter station (including temporary laydown areas) and to accommodate stormwater management infrastructure and landscaping where required. An artist's impression of the indicative layout of the proposed converter station is provided in Plate 2.

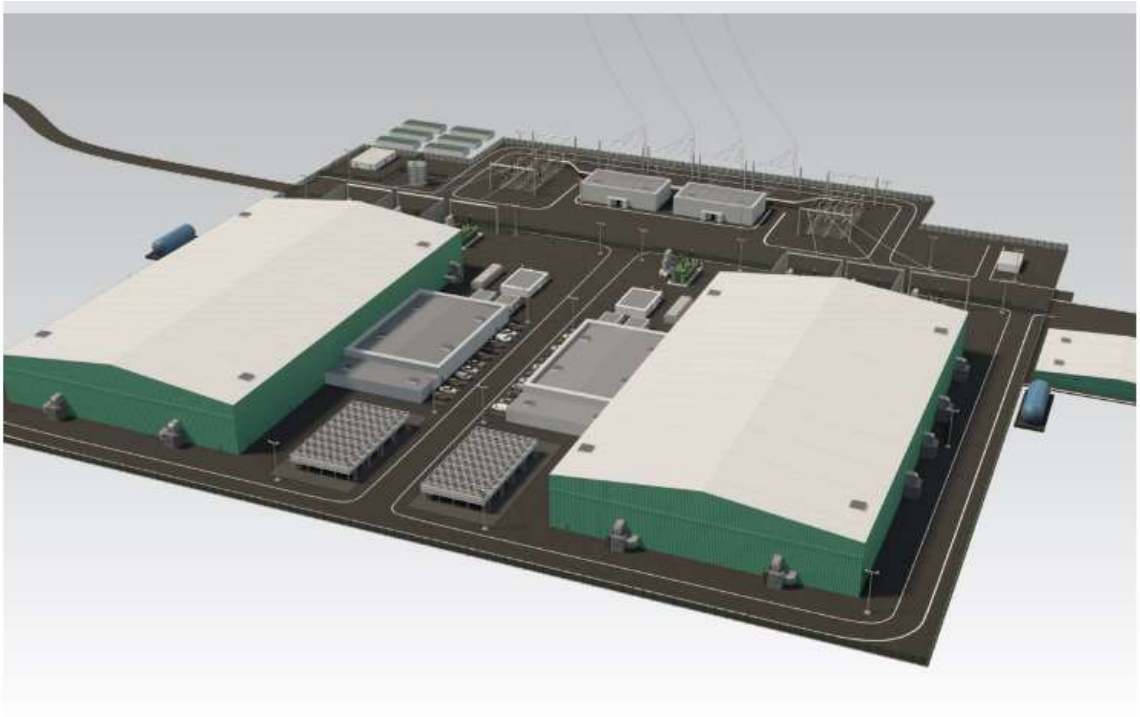

Plate 2: Artist's impression of an indicative converter station site layout

Access roads from the public road network of sufficient width to accommodate the transport and delivery of transformers will be required. Bulk earthworks will be required to establish benches for the converter station.

The converter station will connect Marinus Link's HVDC line to the existing Victorian transmission network via a switching station (either the existing switching station at the Hazelwood Terminal Station or a new switching station within the converter station site compound).

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

Access for construction within the proposed easement will utilise existing roads as much as possible and, subject to landowner approval, existing access tracks within private land. New access tracks may be required to be constructed where existing access is not suitable. The location and extent of temporary access tracks are not yet known; this detail will be established as part of further detailed project design.

Marinus Link will involve the use of temporary storage locations or laydown areas for equipment, plant and materials prior to and during construction that could be located both within or outside the construction corridor. The location and extent of these temporary works areas are not yet known; this detail will be established as part of further detailed project design. Laydown areas are proposed to be located on cleared sites with no significant environmental values where practicable.

Quarry material, concrete and other construction materials will be sourced from existing licensed facilities where practicable.

Key construction activities:

Marinus Link will be constructed in two 750 MW stages, approximately one year apart. Each stage will consist of three cables bundled together. For the land cables, the ducts for both 750MW stages will be installed as part of stage one, to allow the second stage cable lengths to be pulled through between joint bays at a future date, avoiding the need for additional excavation for stage two of construction. The transition station and converter station compounds will be constructed as part of stage one works. Further detail on key construction activities is provided in the following sections.

Subsea cables
Prior to laying each of the subsea cables, a pre-lay grapnel run will be completed by a suitable vessel. The grapnel is a plough-like device that will cut/collect any seabed debris on the cable route such as discarded fishing nets, anchor chains, etc. Following the pre-lay grapnel run, the subsea cables comprising two power cables and a fibre-optic cable will be bundled and laid on the seabed by a larger cable-laying vessel. The subsea cables will be protected by burial in soft substrate using water jetting or trenching and/or armouring using rock dumping or rock mattresses. In hard substrate, the subsea cables will be protected by armouring using rock dumping or rock mattresses or cast-iron shells anchored to the rocky seabed. A third smaller vessel will be responsible for burying the cables.

The area of disturbance will depend on the protection method adopted. An area up to 10 m wide is likely to be disturbed by the pre-lay grapnel run, trenching equipment and/or the placement of rock mattresses or rock dumping. The excavated trench for each cable/stage will be 1 m to 2 m wide and up to 1.5 m deep. It is anticipated that several small “guard” vessels will be engaged during the installation process to monitor for maritime traffic and communicate with surrounding vessels as needed. The installation and burial process for the subsea cables will likely take place over an approximate two-month period.

Separate installation and burial runs will be made for each of the two 750 MW subsea cable stages, with no difference in construction methods.

Shore crossing
It is proposed the Victorian shore crossing will be constructed using HDD, which will extend up to 1 km offshore or to 10 m water depth. The subsea cables will be installed in ducts inserted in the HDD boreholes. The safe limit for pulling cables through ducts determines the feasible length of the HDD. The exit point will be in water depths up to 10 m. The ducts for both 750 MW stages will be installed at the same time, to allow the second stage cable to be pulled through at a future date.

Up to 1 ha is required for the HDD drill pad, which is proposed to be located in cleared freehold land behind the dunes.

The use of HDD at the shore crossing, from approximately 1 km offshore to freehold land behind the dunes, avoids direct impacts to the beach. Although the beach at Waratah Bay is not

anticipated to be closed during construction, management of public safety concerns may require this at the time, in which case disruption would be temporary.

Land cables
It is expected that land cables will be installed in ducts under sealed roads using horizontal boring and in ducts under major watercourses using HDD, where geotechnical conditions permit. Where geotechnical conditions are not favourable, open trenching or a hybrid method comprising short HDD and trenching may be used to construct the crossings. An area of approximately 60 m by 60 m at the HDD entry and exits is required to construct road and watercourse crossings using HDD.

Land cables will be supplied in lengths ranging from 800 m to 1,300 m depending on the ultimate cable design (copper or aluminium conductor). The cable lengths will be joined at joint bays which comprise a concrete pit approximately 12 m long by 2.5 m wide by 2.5 m deep, buried at least 0.5 m below the surface. Where possible, joint bays will be located adjacent to boundary fences or other features as agreed with landowners and land managers to reduce impacts on land use and landholdings.

The ducts for both 750 MW stages will be installed at the same time, to allow the second stage cable lengths to be pulled through between joint bays at a future date, avoiding the need for additional excavation for stage two of construction.

An indicative area of disturbance for construction activities has been defined to inform the referral. The area of disturbance is based on:

- Maximum 36 m-wide (minimum 20 m wide) construction corridor that will include trenches, drainage, equipment (e.g. excavators) and stockpiles.
- Up to 16 ha footprint at the proposed converter station site (6 ha for primary infrastructure, plus additional area for temporary laydown, stormwater management, landscaping, etc.).
- Transition station construction footprint of 70m by 50 m.
- HDD drill pads (entry and exit) of 60 m by 60 m, with a minimum of 40 m by 40 m. It is proposed drill pads will be located to avoid impacting native vegetation where practicable.
- Shore crossing drill pad of 100 m by 100 m and cable route to the transition station up to 70m wide
- Indicative access tracks 10 m wide, using existing tracks and roads where possible.

Impacts to vegetation have been minimised through the proposed use of HDD or other trenchless construction methods at targeted crossing sites (e.g. at waterways, sealed roads, areas of roadside vegetation, etc.). The construction corridor has also been narrowed in some areas to avoid impacting vegetation and provide sufficient clearance to avoid tree protection zones.

The construction corridor, temporary access and laydown areas will be reinstated and rehabilitated to pre-construction uses, or as agreed with the landowner/s.

Converter station
A converter station is proposed to be constructed in the greater Hazelwood area of the Latrobe Valley. Two potential locations are being investigated, one adjacent to the existing Hazelwood Terminal Station, and an alternative in the Driffield area within a current forestry plantation. The converter station will be constructed as follows:

- Site preparation. Surveying and vegetation clearing as needed to provide a safe and efficient area for construction activities.
- Horizontal bench and foundation. Due to the sensitive components of the infrastructure, a completely horizontal surface will be needed as a base. As such the sites will need to undergo horizontal benching to ensure a safe, flat surface. Following this a concrete foundation will be poured.
- Construction of electrical and mechanical systems.
- Testing of all electrical and mechanical systems and connection points.

The proposed converter station will connect to the existing Victorian electricity network via a switching station. Depending on the ultimate location of the converter station, either an existing adjacent switching station will be used (at Hazelwood), or a new switching station will be constructed within the converter station site compound (at Driffield).

Key operational activities:

It is proposed that the infrastructure will be used 24 hours/day, 365 days/year over an anticipated minimum 40-year operational lifespan. Ongoing operational activities will be minimal and likely limited to monitoring and maintenance of the project infrastructure and access tracks.

Expected maintenance includes:

- Servicing, testing and repair of the cables, transition station and converter station infrastructure.
- Maintenance of access tracks.
- Routine inspections to monitor the cable easement for potential operational and maintenance issues, including:
  - Land stability
  - Revegetation
  - Weed invasion
  - Cover at water crossings

Key decommissioning activities (if applicable):

The operational lifespan of the project is anticipated to be a minimum 40 years. At the end of its operational lifespan, Marinus Link will either be decommissioned or upgraded to extend the operational lifespan.

In the event that Marinus Link is decommissioned, all above-ground infrastructure will be removed, and associated land returned to the previous land use or as agreed with the landowner. All underground infrastructure will be decommissioned in accordance with the requirements of the time. This may include removal of infrastructure or some components remaining underground where it is safe to do so.

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

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

Marinus Link also includes project components within Commonwealth and Tasmanian jurisdictions, consisting of:

- Converter station at Heybridge near Burnie in north-west Tasmania, with shore crossings into Tasmanian waters.
- Subsea cable from the Tasmanian shore crossing at Heybridge to the Victorian boundary.

The proponent has engaged with the Commonwealth Department of Agriculture, Water and Environment and Tasmanian Environment Protection Authority (Tasmanian EPA) regarding the assessment and approval requirements for the project. The proponent is seeking a coordinated assessment of the project to align the environmental impact processes likely to be required.

A referral will be submitted to the Commonwealth Minister for the *Environment under the Environment Protection and Biodiversity Conservation Act 1999* (Cth) and further discussion will be held with Tasmanian EPA regarding whether assessment is required under the *Environmental Management and Pollution Control Act 1994* (Tas).

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

☒ No ☒ Yes If yes, please identify related proposals.

Tasmanian Networks Pty Ltd is separately progressing the augmentation of the Tasmanian transmission network (NWTD project), required to support Marinus Link. The NWTD project is located wholly within Tasmanian jurisdiction and is being assessed separately under the EPBC Act and the *Major Infrastructure Development Approvals Act 1999* (Tas). The NTWD project is required to provide additional network capacity and resilience to support the development of Marinus Link and the future demand from increased renewable energy generation in Tasmania.

Marinus Link will facilitate increased energy transfer between Tasmania and Victoria including latent generating capacity in Hydro Tasmania's hydroelectric schemes, that currently can't be dispatched due to insufficient demand in Tasmania and insufficient capacity in the existing Basslink interconnector. Any impacts associated with changes in existing pumped hydro regimes would be assessed separately by the proponent of that scheme.

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

The total cost of Marinus Link with accuracy and contingency included is anticipated at approximately $3 billion. This cost is for the whole Marinus Link project, including components in Victorian, Commonwealth and Tasmanian jurisdictions.

4. Project alternatives

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

The proposed route presented in this referral is the culmination of a comprehensive route and site selection process that has considered technical, environmental, cultural and social constraints. Assessments of ecological values, cultural heritage values and geomorphology were completed to inform the route selection process, with detailed consideration of options occurring since 2018. This process reflects the recognition by Marinus Link Pty Ltd that avoidance of impacts to the environment is best achieved through careful selection of the route. An overview of the route selection process is provided in Attachment 1. The process included:

- Identifying what connection is required (start and end points).
- Identifying what is proposed to be built (technical specification).
- Identifying the physical, biological and socioeconomic values that exist in the area of interest.
- Considering the constraints and identifying the opportunities from these values.
- Identifying prudent and feasible corridors.
- Identifying prudent and feasible routes within the corridors.
- Evaluating these routes against route selection criteria and constraints.
- Identifying a proposed route.

A key objective of route selection in Victoria was to avoid, where possible, the heavily dissected hills and creeks of the ranges, predominantly encountered north of Foster in the headwaters of the Tarwin River. A corridor to the west of the Hoddle Range, up the Tarwin River valley, across the undulating plateau of the Strzelecki Ranges that extends from Mardan to Mirboo North and down the ranges to Driffield was identified as the most feasible option for routes.

Up to five routes, some variations of one route, were investigated with the aims of reducing the route's exposure to steep slopes and unstable landforms, impacts on properties and farming practices, impacts on plantation operations and impacts on watercourses and remnant vegetation.

Further information on the routes considered is provided in Attachment 1.

Further engagement with landowners, the community and stakeholders will continue to inform refinement of the proposed route.

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

No key alternatives will be further investigated. Minor changes to the proposed route may be considered through further consultation with landowners and in response to on-ground conditions and detailed design requirements, however this will be within proximity to the proposed route presented in this referral.

5. Proposed exclusions

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

Geotechnical and other investigations to support detailed design (including native vegetation removal to the minimum extent necessary for such access and investigation) do not form part of this referral.

The purpose of the geotechnical surveys is to characterise the ground conditions within the survey area to determine the suitability of the proposed route alignment, and to inform the construction method e.g. if HDD is possible or cable trenching is suitable at particular locations. Surveys will be completed in both terrestrial and marine locations, and will focus on areas where joint pits and/or trenchless construction methods are proposed, where ground variations or shallow groundwater levels may be expected, and at additional locations where it is considered necessary to better understand the ground conditions. Geotechnical surveys are scheduled to occur in the second half of 2021 and early 2022. MLPL is working with Victorian crown land managers and DELWP under the *Marine and Coastal Act 2018* (Vic) to obtain the appropriate consent and approval for these works.

6. Project implementation

Implementing organisation (ultimately responsible for project, ie. not contractor)**:**

Marinus Link Pty Ltd (MLPL) is the implementing organisation and proponent for the project. MLPL is a wholly-owned subsidiary of Tasmanian Networks Pty Ltd (TasNetworks), the transmission and distribution network service provider for the Tasmanian electricity system.

Implementation timeframe:

The proposed timeline for the delivery of Marinus Link is outlined below in Table 1. These timeframes are indicative only and subject to the successful completion of the regulatory approvals process in all three jurisdictions, obtaining access to land and contractual arrangements.

Table 1 Project schedule

Project Activity	Timing
Complete route selection process	4th Quarter 2021
Complete government approvals processes	4th Quarter 2023
Final investment decision	4th Quarter 2023
Commence manufacturing and construction (Stage 1)	3rd Quarter 2024
Commissioning/commence operations (Stage 1)	1st Quarter 2028
Commence manufacturing and construction (Stage 2)	3rd Quarter 2025
Commissioning/commence operations (Stage 2)	1st Quarter 2031

Proposed staging (if applicable):

The proponent proposes to develop Marinus Link in two stages, each stage consisting of a 750 MW HVDC symmetrical monopole, and expected to be separated by two to three years. Conduits/ducts for the second stage cables will be installed at the same time as those in the first stage, to avoid further excavation activities for stage two. Stage two construction activities will consist of cables being drawn through the pre-laid ducts at each joint pit.

7. Description of proposed site or area of investigation

Has a preferred site for the project been selected?

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

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

While the ultimate footprint of Marinus Link onshore in Victoria will be a 20 m wide easement, with a construction corridor with a general maximum width of 36 m, a broader 220 m wide survey area has been assessed to provide for flexibility in the final siting and design of the project.

The following preliminary baseline studies have been completed to characterise terrestrial and marine environmental and heritage values within the survey area, and to inform a preliminary assessment of impacts for this referral:

- Attachment 1: Marinus Link Route Options Report (Marinus Link Pty Ltd 2021)
- Attachment 2: Nearshore Marine Benthic Characterisation of Tasmanian and Victorian Landfall Options (CEE 2021)
- Attachment 3: Maritime Archaeological Desktop Assessment (Cosmos Archaeology Pty Ltd 2021)
- Attachment 4:Terrestrial Ecology Baseline Study (Eco Logical Australia and Entura 2021)
- Attachment 5: Preliminary Marine Ecology and Resource Use Desktop Assessment Study (Enviro Gulf 2021)
- Attachment 6: Terrestrial Cultural Heritage priority baseline study (Eco Logical Australia 2021)

These studies were mainly desktop-based, with some limited ground-truthing (e.g. cultural heritage) or preliminary field surveys (e.g. benthic ecology) where access to the survey area was available.

Marine environment (subsea cable)
For the purpose of this referral, the marine environment potentially impacted by Marinus Link is the portion of the survey area that is within Victorian state waters, out to 3 NM (see Figure 2).

Waratah Bay has a relatively flat beach and gently sloping seabed that extends to the floor of Bass Strait at approximately 80 to 90 m water depth. It is characterised by sandy seabed, with areas of cobble and patchy reef habitat (as detailed in Attachment 2). The sandy seabeds support seagrass as well as range of macroalgae, invertebrates and fish where sparse shell or cobble is present.

The closest marine national park to the Victorian marine survey area is Wilsons Promontory Marine National Park, which is located at the southern tip of Wilsons Promontory approximately 15 km east. The survey area does not encroach on any marine parks or marine reserves.
Bass Strait has weak nearshore tidal currents and complex large scale ocean currents due to the merging of the Pacific Ocean and Southern Ocean.

Shore crossing
The shore crossing at Waratah Bay is a sandy beach backed by a narrow sand barrier with a single high dune ridge and backshore swale with a remnant tidal channel. The dune system of Waratah Bay and Sandy Point Beach and other adjacent habitats (such as Shallow Inlet) supports intact remnant vegetation which provides significant habitat for a range of threatened species, including migratory shorebirds.

The shore crossing will be under the Waratah Bay-Shallow Inlet Coastal Reserve.

Terrestrial environment
The terrestrial portion of the survey area extends from the shore crossing at Waratah Bay, approximately 90 km inland to a proposed converter station in the greater Hazelwood area (see Figure 2). The proposed route traverses hills and wide, low alluvial valleys with small catchments,

and the higher, steeper terrain of the Strzelecki Ranges. The two major river crossings of the proposed route include the Tarwin River East Branch and Morwell River, with narrow floodplains.

The Strzelecki Ranges extend east from Western Port Bay to east of Traralgon. The ranges comprise the western and eastern ranges, with the division between the ranges a line extending from Morwell to Meeniyan. Elevations range from 300 m to 500 m above sea level (ASL), with the highest point – Mt Tassie (730 m). The Grand Ridge runs east–west along the ranges and is the watershed between coastal and inland river systems.

The proposed route falls within the Gippsland Plain and Strzelecki Ranges bioregions and lies within both private and public land. The Gippsland Plain bioregion has been largely cleared of native vegetation in areas dominated by large pastoral properties, with only small, fragmented patches of remnant and planted woodlands and scattered trees remaining, primarily along road reserves, property boundaries and creek lines. The fragmented woodland vegetation on private property is still a prominent feature of the landscape and provides important corridors connecting the small reserves and larger parks scattered throughout the region. In the foothills of the Strzelecki Ranges, woody vegetation cover increases, particularly along roadsides, creeks and gullies.

The Gippsland Plain contains small, fragmented patches of remnant and planted woodlands and scattered trees remain along road reserves, property boundaries and creek lines. The fragmented woodland vegetation on private property is still a prominent feature of the landscape and provides important corridors connecting the small reserves and larger parks scattered throughout the region. In the foothills of the Strzelecki Ranges, woody vegetation cover increases, particularly along roadsides, creeks and gullies.

Eventually this heavily wooded agricultural landscape gives way to dense plantations of both native and introduced species in the ranges north of Mirboo North. Whilst most of this area is managed plantation, there are some larger patches and narrow corridors of native vegetation along creek lines and harvesting buffers. Upon leaving the foothills on the northern side of the ranges, the route returns to agricultural land interspersed with fragmented woodlands through the undulating plains of the Latrobe Valley.

Site area (if known): ……340 hectares
The indicative area of disturbance on land in Victoria is approximately 340 ha. This includes the route corridor, converter station, transition station, shore crossing drill pad and HDD drill pads.

The proposed converter station will be a nominal 260 m by 230 m in size, plus associated infrastructure and construction requirements (up to 16 ha).

The proposed transition station will be approximately 70 m by 50 m in size, plus associated infrastructure and laydown areas.

Route length (for linear infrastructure) ……see below (km) **and width** …see below. (m)

Table 2 sets out the size of the indicative route length for the linear infrastructure components within Victoria.

Table 2 Route length of linear infrastructure components of Marinus Link (Victoria)

Component	Likely development footprint/action area
Subsea cables from 3NM to a transition station at Waratah Bay, including onshore section from high water mark to transition station located in farmland behind the coastal reserve.	Approximately 10 m-wide area of disturbance for each cable for construction on the sea bed, extending approximately 6.5 km from Waratah Bay to the extent of Victorian waters. Shore crossing drill pad approximately 100m by 100 m. Construction corridor 70 m wide from the drill pad to the transition station.

Underground cable from transition station to a converter station near Hazelwood	Construction corridor of maximum 36 m and minimum 20 m wide for approximately 90 km. HDD entry and exit areas of disturbance of 60 m by 60 m, with a minimum of 40 m by 40 m. It is proposed drill pads will be located on cleared sites with no significant environmental values where practicable.

Current land use and development:

Marinus Link will traverse several different land uses. The potential to affect existing productive land uses has been a key consideration in the route selection process.

In the southern portion of the route, near Waratah Bay, the cable traverses rural residential areas and farmland, road corridors and industrial land, while the transition station at Waratah Bay will be located behind the coast reserve, within farmland (see Figure 3 and Figure 4).

The proposed route avoids the potentially landslip and erosion prone steep slopes of the elevated plateau that extends from Mardan to Mirboo North, instead skirting around Mirboo North to maintain the gentler terrain at the head of the gullies. The alignment continues through several softwood and hardwood plantations through Darlimurla, to Strzelecki Highway east of Delburn.

Major shipping lanes pass through Bass Strait, connecting regional and international trading ports. Coastal trading occurs between the Port of Melbourne and ports across northern Tasmania. Major fisheries include scallops, school shark, octopus, crayfish and finfish (see Figure 5).
Oil and gas production assets occur in the Otway and Gippsland basins off the south-west and eastern Victorian coast respectively, and the Yolla gas field is located mid-strait with a pipeline extending to the Victorian coastline west of the project area (see Figure 6).

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

Most nearshore recreational fishing in Victorian coastal waters is located to the east of Wilsons Promontory in Corner Inlet that has easy access via population centres at Port Franklin and Port Welshpool. There are very few population centres along the coast of Waratah Bay and recreational fishing is therefore expected to be infrequent.

The shore crossing at Waratah Bay occurs within 1 km of the existing Telstra BS1 cable, with the proposed transition station to be located adjacent to the existing Telstra hut associated with that cable, at Waratah Road.

In the southern portion of the terrestrial route, near Waratah Bay, the cables will generally fall within rural residential and farmland, road corridors and industrial land, while the transition station at Waratah Bay falls behind the coast reserve, within farmland. The route also traverses a property line adjacent to the Great Southern Rail Trail reserve, a former railway reserve which is now used as a bicycle trail. The route enters and follows the unmade government road reserve adjacent to the rail reserve and runs in the reserve north to near Stony Creek.

Major roads intersected by the cable route include the South Gippsland Highway (between Meeniyan and Stony Creek) and the Strzelecki Highway in the north of the route between Delburn and Driffield.

The cable avoids the potentially landslip and erosion prone steep slopes of the elevated plateau that extends from Mardan to Mirboo North, skirting around Mirboo North to maintain the gentler terrain at the head of the gullies. Old Darlimurla Road is followed through softwood and hardwood plantations to Darlimurla. Firebreakers have been constructed adjacent to the Strzelecki Highway road reserve to protect the softwood and hardwood plantations. Wide firebreakers on either side of the road offer good routes along the road. From Darlimurla, the route follows Ten Mile Creek Road and plantation access roads through the plantations to Strzelecki Highway east of Delburn. No significant incompatible land uses were identified during the route selection process.

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

Planning Schemes
The project area is covered by the South Gippsland and the Latrobe Planning Schemes.

Zones
Land use zones traversed by the proposed route are shown in Figure 4, and are predominantly Farming Zone, with areas of Special Use Zone and Public Conservation and Resource Zone.

Overlays
Table 3 outlines the planning overlays under the Latrobe and South Gippsland Planning Schemes which intersect the proposed route. These overlays are also shown in Figure 3.

Table 3 Overlays intersecting with project

	Overlay	Length
Latrobe Planning Scheme		
ESO1	Environment Significance Overlay 1 – Urban buffer	2.15 km
FO	Floodway Overlay	0.09 km
LSIO	Land Subject to Inundation Overlay	0.36 km
SRO1	State Resource Overlay 1 – Gippsland brown coalfields	3.88 km
BMO	Bushfire Management Overlay	12.05 km
DDO1	Design and Development Overlay 1 – Major pipeline infrastructure	0.52 km
South Gippsland Planning Scheme		
ESO1	Environment Significance Overlay 1 – Areas of natural significance	0.45 km
ESO2	Environment Significance Overlay 2 – Special water supply catchment areas	25.67 km
ESO3	Environment Significance Overlay 3 – Coastal settlements	3.35 km
ESO5	Environment Significance Overlay 5 – Areas susceptible to erosion	32.87 km
SLO3	Significant Landscape Overlay 3 – Corner Inlet Amphitheatre	7.61 km
LSIO	Land Subject to Inundation Overlay	1.77 km
BMO	Bushfire Management Overlay	17.05 km

Local government area(s):

The proposed route traverses the following local government areas:

- South Gippsland Shire
- City of Latrobe

8. Existing environment

Overview of key environmental assets/sensitivities in project area and vicinity
(cf. general description of project site/study area under section 7)**:**

Desktop assessments of environmental and cultural heritage values, with limited ground-truthing where possible, have been completed over the 220 m-wide terrestrial survey area (based on the proposed 20 m easement with a 100 m buffer either side). An indicative area of disturbance (described above) was defined to inform an assessment against referral criteria for an EES under the Victorian *Environment Effects Act 1978* (EE Act) including those related to losses in native vegetation and endangered Ecological Vegetation Class (EVC). This indicative potential loss of native vegetation will be reduced where practicable through further refinement of the route and construction method.

Desktop assessments of marine environmental and archaeological values have also been completed, with limited field verification where possible.

The key environmental values and sensitivities identified in these studies are summarised in the following sections.

Marine environment (subsea cables)
Waratah Bay is mostly sandy seabed with an area of cobble and patchy reef that supports well-developed biological communities. No EPBC Act or FFG Act listed species were identified during preliminary field surveys (see Attachment 2), however this does not eliminate their possible presence.

Six maritime archaeological sites were identified as being possibly located within 5 km of the conceptual centreline of the Waratah Bay nearshore survey area. All six sites are shipwrecks. None of the wrecks have been reported found, however based on the assessed accuracies of the six wrecks, all are possibly located within the survey area (see Attachment 3).

Shore crossing
The shore crossing at Waratah Bay is a sandy beach backed by a narrow sand barrier with a single high dune ridge and backshore swale with a remnant tidal channel. Native vegetation in this area provides suitable habitat for a range of marine and/or migratory shorebirds including listed species. HDD is proposed for the shore crossing to the transition station to avoid impacts on Waratah Bay–Shallow Inlet Coastal Reserve.

This portion of the route is in a zone of potential acid sulfate soils (PASS) and within the 1 in 100-year flood inundation area. Between the channel and the shore is a steep ridged foredune up to 80 m wide and 15 m high.

Terrestrial environment
From the transition station, the land cable route runs northwest to the Tarwin River valley which it follows 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 Strzelecki Ranges extend east from Western Port Bay to east of Traralgon and support locally steep slopes that are susceptible to landslip. Active landslides have been noted in landforms surrounding Mirboo North, and the western slopes of the Tarwin River valley.

Based on preliminary desktop assessments and distribution modelling, small patches of grassland and woodland in the Latrobe Valley may qualify as the FFG Act listed Forest Red Gum Grassy Woodland Community and/or Central Gippsland Plains Grassland. However, field surveys are required to verify whether any remnant vegetation meets the condition thresholds to be classified as this threatened community.

The project will require the removal of native vegetation which has the potential to impact on threatened species and communities. Based on the indicative area of disturbance described above, an estimated 14 hectares of native vegetation and 44 scattered trees may be removed along the route. This would include the removal of 5 hectares of vegetation belonging to an

endangered EVC (see Attachment 4). These EVCs include Damp Forest (EVC 29, 1.7 ha), Herb-rich Foothill Forest (EVC 23, 1 ha), Swamp Scrub (EVC 53, 1.1 ha), Swampy Riparian Woodland (EVC 83, 0.2 ha), Plains Grassy Woodland (EVC 55, 0.9 ha), and Plains Grassy Forest (EVC 151, 0.3 ha). As noted above, this indicative potential loss of native vegetation will be reduced where practicable through further refinement of the route and construction method.

A search of the Victorian Aboriginal Heritage Register identified 11 registered Aboriginal cultural heritage places are located within the survey area. These include nine artefact scatters, one quarry/artefact scatter and one low-density artefact distribution (see Attachment 6, ELA and CHMA 2021). These places occur at three primary locations: at Waratah Bay, south-west of Driffield, and south-east of the Hazelwood Cooling Pond (see Figure 7). However, the clustering of registered places into three discrete locations should not be taken as definitive evidence of the true range and distribution of Aboriginal cultural heritage values across the survey area, as it is likely to be the result of a lack of archaeological surveys having been conducted in this area.

No places of national, state, regional or local historical heritage significance are located within the survey area (Attachment 6). Substantial sections of the route traverse greenfield areas where the potential for significant historical places to occur is limited given the predominant use of the land for agricultural and pastoral activities (ELA and CHMA 2021).

Several parks and reserves occur in the region, including Cape Liptrap Coastal Park, Shallow Inlet Marine Coastal Park, Waratah Bay- Shallow Inlet Coastal Reserve, Wilsons Promontory National Park, Bald Hills Creek Wildlife Reserve, Great Southern Rail Trail Reserve, and Mirboo North Regional Park. Of these, the survey area intersects the Great Southern Rail Trail reserve near Fish Creek, and the Waratah Bay – Shallow Inlet Coastal Reserve at the shore crossing, as shown in Figure 8 (ELA and Entura 2021, Attachment 4).

Surface water catchments of the survey area are separated by the Strzelecki Ranges. The Morwell River and its tributaries drain the northern slopes of the ranges and the Tarwin River and its tributaries, the southern slopes and undulating plateau of the ranges.

The Morwell River discharges to the Latrobe River north of Morwell. The Latrobe River discharges to the Gippsland Lakes near Sale in Central Gippsland. The Morwell River is crossed north of Yinnar, west of Hazelwood Cooling Pondage. Major tributaries of the Morwell River crossed by the survey area are Little Morwell River near Darlimurla and Eel Hole Creek near Churchill. Eel Hole Creek is crossed where it enters Hazelwood Cooling Pondage.

The Tarwin River discharges to Andersons Inlet at Tarwin Lower east of Inverloch. Major tributaries of the Tarwin River crossed by the survey area are Tarwin River East Branch near Dumbalk, Stony Creek eat of Meeniyan and Fish Creek south of Buffalo.

9. Land availability and control

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

☐ No ☒ Yes If yes, please provide details.

In addition to private freehold land, the project traverses unmade government roads, government roads, reserved Crown land, unreserved Crown land and unreserved vested Crown land.

Current land tenure (provide plan, if practicable):

The Marinus Link terrestrial route in Victoria is 90 km in length and traverses multiple land parcels from Waratah Bay to Hazelwood, including private freehold, commercial forestry, Crown land, government roads, and existing easements for gas and electricity transmission infrastructure.

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

The proponent (Marinus Link Pty Ltd) will own the land parcel/s on which the proposed converter station will be constructed. Two possible locations are currently being investigated for the converter station: adjacent to the exiting Hazelwood Terminal Station and a site within forestry plantations in the Driffield area.

A 20 m easement will be established over the route. The easement will be reinstated and rehabilitated to pre-construction uses, or as agreed with the landowner/s.

MLPL has commenced negotiation for access and easement agreements with all impacted landowners to facilitate the further investigation of and future development of Marinus Link.

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

The Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC) native title interests have been recognised for lands in Central and East Gippsland under a determination of the Federal Court. These include the section of the survey area between Mirboo North and Hazelwood. This area is also the subject of a Recognition and Settlement Agreement under the *Traditional Owner Settlement Act 2010* (Vic).

An unregistered native title claim by the Boonwurrung People is yet to be determined in relation to the section of the survey area between Waratah Bay and Mirboo North in which there is no Registered Aboriginal Party. Indigenous groups including Bunurong Land Council Aboriginal Corporation (BLCAC), Boonwurrung Land and Sea Council Aboriginal Corporation and GLaWAC have asserted traditional ownership interests in this area (see Figure 9 and Figure 10).

10. Required approvals

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

Commonwealth

- Referral under the *Environment Protection and Biodiversity Conservation Act 1999*.

State

- Proposed Incorporated Document through amendments to two planning schemes under the *Planning and Environment Act 1987*.
- Two Cultural Heritage Management Plans under the *Aboriginal Heritage Act 2006.*
- Consent to use, develop and/or undertake works on marine and coastal Crown land under the *Marine and Coastal Act 2018.*
- Permit to take protected flora under the *Flora and Fauna Guarantee Act 1988.*
- Road closure, diversion and/or opening permits under the *Road Management Act 2004*
- Permit to control wildlife under the *Wildlife Act 1975.*
- Permit for works on waterways under the *Water Act 1989.*

Note that consent under the *Marine and Coastal Act 2018* (Vic) was issued for marine geophysical and geotechnical investigations for the project in February 2020.

Have any applications for approval been lodged?

☒ No ☒ Yes If yes, please provide details.

A referral will also be lodged with the Commonwealth Government under the EPBC Act.

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

- Victorian Department of Environment, Land, Water and Planning
- Commonwealth Department of Agriculture, Water and the Environment
- Tasmanian Environment Protection Authority
- Heritage Victoria
- South Gippsland Shire Council
- Latrobe City Council
- Gunaikurnai Land and Waters Aboriginal Corporation
- First Peoples – State Relations
- West Gippsland Catchment Management Authority
- Regional Roads Victoria

Other agencies consulted:

- Bunurong Land Council Aboriginal Corporation
- Boonwurrung Land and Sea Council Aboriginal Corporation

PART 2 POTENTIAL ENVIRONMENTAL EFFECTS

11. Potentially significant environmental effects

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

Marinus Link traverses a significant geographical area in Victoria, from the edge of coastal waters (for the purpose of this referral), making landfall at Waratah Bay, and extending approximately 90 km inland to the greater Hazelwood area of the Latrobe Valley (see Figure 2). Potential impacts from the project are largely associated with the extent of the project, disturbance of land and the likely clearance of vegetation during the construction phase of the project.

Impacts during operation are anticipated to be minimal due to the majority of infrastructure being located underground. Potential impacts are outlined further in the following sections, based on the outcomes of preliminary technical studies completed for the project.

The proposed route presented in this referral is the culmination of a route and site selection process that has considered technical, environmental, cultural and social constraints. Avoidance of significant impacts on existing infrastructure, environmentally sensitive areas including threatened species habitat and threatened ecological communities, and land use was a key objective and the primary mitigation for linear infrastructure.

The following sections summarise the potential environmental effects from the project, based on the desktop assessments of environmental and cultural heritage values (terrestrial and marine) that have been completed. Further detailed assessments of potential impacts will be completed to support the detailed siting and design of the project infrastructure.

An indicative area of disturbance of 20 m to 36 m wide was assumed for the terrestrial cable alignment, with wider areas allowed for HDD crossing drill sites, and above-ground infrastructure including the converter station and transition station (see Section 3 for detail). The indicative area of disturbance was defined to inform an assessment against referral criteria for an EES under the EE Act, including those related to losses in native vegetation and endangered EVCs. This indicative potential loss of native vegetation will be reduced where practicable through further refinement of the route and construction method.

Potential effects to flora and fauna
Vegetation removal will be required for the construction of the terrestrial components of the project (i.e. transition station, land cables and convertor station). Vegetation removal is anticipated to primarily occur within constrained sections of the survey area through the Strzelecki Ranges and where the route is located within vegetated road reserves which typically support remnant native vegetation or mature trees.

Based on the above methodology and a desktop assessment of vegetation types (mapped EVCs), it is estimated that approximately 14 ha of native vegetation and 44 scattered trees would be required to be removed for construction purposes.

Table 4 provides the estimated area of clearing for each category of EVC, based on the likely area of disturbance for the proposed route (see Attachment 4).

Table 4 Victorian ecological vegetation classes

Ecological Vegetation Class	Potential clearing within area of disturbance
Endangered EVCs	5 ha
Vulnerable EVCs	8 ha
Depleted EVCs	0.8 ha
Scattered trees	44

Several listed flora and fauna species were determined as likely to occur within the survey area, and have the potential to be impacted by the project, as detailed in Section 12.

While using underground cables reduces amenity impacts and some land use impacts, it does necessitate excavating a trench for the majority of the route. The project could impact on the above EVCs and on listed flora and fauna species directly through disturbance from construction activities (i.e. clearing, trenching, and vehicle interactions) along the route. Indirect impacts could occur due to changes to groundwater (for groundwater dependent species and ecosystems), introduction or spread of weed or pathogens, fragmentation of habitat and edge effects.

Landscape values
Potential visual effects from the underground cables will be limited to the construction phase; given the land cables will be underground, it is unlikely that this component of the route will have visual impact, however there will be temporary visual changes to the landscape along the ultimate cable route during construction where vegetation is cleared and trenches are excavated. The disturbed areas within the easement will be re-instated and low laying vegetation reinstated as agreed with the affected landholder.

The converter station will typically occupy an area of 6 ha with nominal building dimensions of 260 m by 230 m. An area of up to 16 ha may be required to accommodate construction requirements. The transition station at Waratah Bay will includes structures similar to shipping containers, of a height in keeping with the adjacent building (less than 3 m). These structures will alter the existing landscape characteristics at those locations, however mitigation measures such as siting and design of the built form (e.g. orientation/placement away from sensitive viewpoints, colour of materials used, etc.) and vegetation screening are proposed to be used to mitigate impacts. Further investigations would allow an assessment of the ultimate extent and significance of the visual impacts of the project.

Cultural heritage
A desktop assessment of Aboriginal and historic cultural heritage was completed by ELA and CHMA (2021), see Attachment 6. The assessment looked at a survey area of 220 m-wide and a regional study area buffered 2 km from the proposed route centreline.

A search of the Victorian Aboriginal Heritage Register identified 50 registered Aboriginal cultural heritage places with the Victorian regional study area, 11 of which are located within the survey area (Attachment 6). Registered places within the regional study area included 39 artefact scatters, six low-density artefact distributions, three scarred trees, three earth features, three shell middens and two quarries. A complete list of these can be found in Attachment 6. The 11 registered sites within the survey area consist of nine artefact scatters, one quarry and one low-density artefact distributions. The eleven registered places intersected by the Victorian survey area occur at three primary locations:

- within 1 km of the Waratah Bay coastline, in close proximity to Waratah Road
- south-west of Driffield, along the Strzelecki Highway and Kings Road
- in the south-eastern portion of the Hazelwood Cooling Pond.

The clustering of registered places into three discrete locations should not be taken as definitive evidence of the true range and distribution of Aboriginal cultural heritage values across the survey area, as it is likely to be the result of a lack of archaeological surveys having been conducted in this area. Further surveys are proposed as part of the project impact assessment, and two CHMPs will be prepared.

No places of national, state, regional or local historical heritage significance are located within the survey area (Attachment 6). Substantial sections of the route traverse areas where the potential for significant historical places to occur is limited given the predominant use of the land for agricultural and pastoral activities (ELA and CHMA 2021).

Six maritime archaeological sites were identified as being possibly located within 5 km of the conceptual centreline of the Waratah Bay nearshore survey area. All six sites are shipwrecks. None of the wrecks have been reported found, however based on the assessed accuracies of the six wrecks, all are possibly located within the survey area (see Attachment 3). Further detailed maritime archaeology assessment will be completed as part of future project assessment, with

measures to avoid or mitigate impacts to identified maritime archaeological sites to be considered through project design and alignment.

12. Native vegetation, flora and fauna

Native vegetation

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

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

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

A comprehensive desktop-ecological assessment, with ground truthing from publicly accessible areas was prepared by ELA (Attachment 4).

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

☒ NYD Estimated area ……14…….(hectares)

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

☒ N/A …… approx. percent (if applicable)

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

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

A desktop assessment was undertaken which identified the potential for the following EVCs to be present and potentially impacted:

Endangered EVCs:

- Damp forest (EVC 29)
- Herb-rich Foothill Forest (EVC 23)
- Swamp scrub (EVC 53)
- Swampy Riparian Woodland (EVC 83)
- Plains Grassy Woodland (EVC 55)
- Plains Grassy Forest (EVC 151, Strzelecki Ranges bioregion)

Vulnerable EVCs:

- Damp Healthy Woodland/Lowland Forest Mosaic (EVC 1106)
- Lowland Forest (EVC 16)
- Plains Grassy Forest (EVC 151, Gippsland Plain bioregion)

Depleted EVCs:

- Wet forest (EVC 30)
- Coastal Dune Scrub/Coastal Dune Grassland Mosaic (EVC 1)

Least concern EVCs:

- Estuarine Wetland (EVC 10)

Table 5 provides a summary of how much of each potentially impacted EVC is present in the Strzelecki bioregion and the Gippsland Plain bioregion, and the proportion of each which may be impacted by the Project based on the above methodology.

Table 5 Expected impacts to EVCs in their respective bioregions

Bioregion	EVC	EVC Status	Area of EVC in bioregion	Area of EVC potentially impacted	Expected percentage of EVC to be impacted
Strzelecki	Wet Forest	Depleted	651,349 ha	0.8 ha	<0.001%
	Damp Heathy Woodland/Lowland Forest Mosaic	Vulnerable	386,094 ha	1.6 ha	<0.001%
	Lowland Forest	Vulnerable	6,683 ha	2 ha	0.03%
	Damp Forest	Endangered	25,170 ha	1.7 ha	0.007%
	Herb-rich Foothill Forest	Endangered	2,567 ha	1 ha	0.04%
	Plains Grassy Forest	Endangered	350 ha	0.3 ha	0.09%
Gippsland Plain	Damp Heathy Woodland/Lowland Forest Mosaic	Vulnerable	5,384 ha	2.6 ha	0.05%
	Plains Grassy Woodland	Endangered	20,522 ha	0.9 ha	0.004%
	Plains Grassy Forest	Vulnerable	30,426 ha	1.6 ha	0.005%
	Swamp Scrub	Endangered	27,359 ha	1.1 ha	0.004%
	Swampy Riparian Woodland	Endangered	5,282 ha	0.2 ha	0.004%
	Coastal Dune Scrub	Depleted	8,250 ha	0.1 ha	0.001%

Have potential vegetation offsets been identified as yet?

☒ NYD ☐ Yes If yes, please briefly describe.

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

The assessment is based on desktop level information only with some ground truthing of publicly accessible areas. Further detailed assessment is proposed to reduce the uncertainty regarding the presence of native vegetation and potential impacts of the project.

NYD = not yet determined

Flora and fauna

What investigations of flora and fauna in the project area have been done?
(provide overview here and attach details of method and results of any surveys for the project & describe their accuracy)

Terrestrial

ELA has completed a preliminary assessment to characterise terrestrial ecological values and identify ecological values considered likely to occur within the survey area. Some limited field reconnaissance was completed in publicly accessible areas.

The following information used to inform the assessment:

- EPBC Act Protected Matter Search Tool (PMST)
- Victorian Biodiversity Atlas
- Nature Kit and Native Vegetation Information Management system
- Visualising Victoria's Biodiversity
- DELWP Native Vegetation spatial layers
- Publicly available aerial imagery

Marine

EnviroGulf Pty Ltd (Attachment 5) completed desktop analysis of the environmental values in the marine survey areas for Marinus Link. CEE (Attachment 2) completed a desktop assessment of benthic ecology values which was also informed by preliminary field investigations in nearshore areas.

The assessment was informed by searches of:

- PMST
- Victorian Biodiversity Atlas

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

☐ NYD ☐ No ☒ Yes If yes, please:

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

Marine environment

A preliminary marine benthic ecology assessment was completed for the project, based on desktop review of available databases and preliminary baseline field surveys (detailed in Attachment 2). No EPBC Act or state-listed flora species were identified in the marine survey area in Waratah Bay (CEE 2021).

No marine biological assemblages, seabed communities or species of conservation significance were identified (CEE 2021, Attachment 2).

The reef habitat in Waratah Bay has a well-developed biological community, however no EPBC Act or state-listed species were identified in the assessment (CEE 2021, Attachment 2).

More mobile marine fauna species such as fish, sharks, dolphins, turtles, etc. of conservation significance may utilise the marine survey area, as outlined in Attachment 5. Larger marine fauna such as whales would likely avoid the nearshore marine environment due to vessel noise and traffic, however their presence cannot be ruled out (EnviroGulf 2021, Attachment 5).

Terrestrial environment

The desktop assessment (ELA 2021, Attachment 4) identified numerous state and/or Commonwealth listed flora species considered to be likely to occur within the terrestrial survey area.

A full list of these species potentially occurring within the survey area is provided in Attachment 4, and includes eight EPBC Act listed flora species, two FFG listed flora species, and 26 DELWP advisory list species.

The following flora species are listed under both the FFG Act and EPBC Act and are likely to occur in the survey area:

- Matted flax-lily (*Dianella amoena*) - endangered
- Strzelecki gum (*Eucalyptus strzelecki*) - vulnerable
- Green-striped greenhood (*Pterostylis chlorogramma*) – vulnerable
- Leafy greenhood (*Pterostylis cucullate*) – vulnerable
- Spiral sun orchid (*Thelymitra matthewsii*) – vulnerable

In addition to the above, the following two species are listed under the FFG Act and are also likely to occur within the survey area:

- Grey billy-buttons (*Craspedia canens*)
- Slender tree fern (*Cyathea cunninghamii*).

A full list of state threatened species likely to occur within the survey area is provided in Attachment 4.

One EPBC Act listed threatened ecological community and three FFG Act listed communities are predicted to occur within the survey area:

EPBC Act listed threatened ecological community:

- Gippsland Red Gum (Eucalyptus tereticornis subsp. mediana) Grassy Woodland and Associated Native Grassland

FFG Act listed threatened ecological communities:

- Forest Red Gum Grassy Woodland Community

- Central Gippsland Plains Grassland
- Warm Temperate Rainforest (East Gippsland Alluvial Terraces) Community

Several species of state and Commonwealth listed threatened and/or migratory fauna species have been identified as potentially occurring within the survey area, including:

- 13 EPBC Act listed threatened species
- 32 FFG Act listed threatened species
- 59 species listed as threatened on the DELWP threatened fauna species advisory lists

A full list of species is provided in Attachment 4.

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

Potential threats to conservation significant flora and fauna may include:

- Direct loss of remnants of flora and fauna habitat from vegetation clearance.
- Indirect disturbance or degradation to flora, vegetation and fauna habitat, reducing vigour and capacity of vegetation, resulting in a long-term decline or loss over time.
- Potential injury or death of fauna from vegetation clearing, earthworks, vehicle movements or entrapment in trenches.
- Incursion of pest species.
- Disturbance of fauna due to dust, noise, vibration and light during construction.

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

☒ NYD ☒ No ☒ Yes If yes, please:

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

Marine

The proposed route and broader survey area do not pass through any Victorian marine conservation areas such as marine protected areas or coastal national parks, and overall impacts to the marine environment are anticipated to be negligible (EnviroGulf 2021, Attachment 5).

Impacts will likely occur during the construction phase of the project, and will result directly from seabed disturbance during the installation and burial of the cable, or indirectly from vessel noise and vibration, or deterioration of water quality (e.g. construction-derived turbidity plumes, release of chemicals from vessels/equipment).

Potential impacts to sensitive seabed habitats are considered more likely to occur in offshore/deep-water areas outside of Victorian coastal waters, where possible coral-sponge communities occur (EnviroGulf 2021, Attachment 5).

Noise and vibration impacts from the project on mobile marine fauna within Waratah Bay are possible from vessels during the construction/installation of subsea cables. Smaller species are considered to be mobile and generally able to avoid existing impacts from vessel traffic etc. within Waratah Bay. Larger species such as whales are unlikely to frequent nearshore waters due to high marine traffic disturbances.

Potential operations phase impacts may include the generation of electromagnetic fields (EMF) and/or heat, and consequential impacts to sensitive marine fauna. Based on the extensive literature review carried out for the Basslink interconnector project, no adverse impacts were anticipated on sensitive marine fauna such as cetaceans from magnetic fields generated by Basslink marine infrastructure. This conclusion is based partly on overseas experience with subsea HVDC interconnectors, which have not shown links between subsea cables and behavioural impacts or live strandings. Further to this, it is considered unlikely that the magnetic field of Marinus Link will be perceived by magnetosensitive cetaceans, given the naturally-occurring geomagnetic anomalies present in Bass Strait (EnviroGulf 2021, Attachment 5).

The project is not likely to have a significant impact on any threatened or migratory species within Waratah Bay. Any impacts will be minor and temporary in nature and will be limited to a narrow alignment in the context of Bass Strait.

Terrestrial
The preliminary ecological assessment completed for the project (Attachment 4) considered the impact of the project on threatened ecological communities and threatened flora and fauna species that are known to or are likely to occur within the survey area. Given the uncertainty around the nature and location of these potential values (based on a desktop assessment), the assessment considered the unmitigated impact of underground cable installation, with the exception of the proposed HDD for the shore crossing and at targeted crossing sites (e.g. waterways and some areas of roadside vegetation).

Based on this, the following flora species have the potential to be impacted by construction activities (ELA and Entura 2021):

- *Dianella amoena* (matted flax-lily) - EPBC Act and FFG Act listed
- *Eucalyptus strzeleckii* (Strzelecki gum) - EPBC Act and FFG Act listed
- *Amphibromus fluitans* (river swamp wallaby-grass) – EPBC Act listed
- *Cyathea cunninghamii* (slender tree fern) - FFG Act listed
- *Eucalyptus fulgens* (green scentbark) - FFG Act listed
- *Eucalyptus kitsoniana* (bog gum) - FFG Act listed
- *Eucalyptus yarraensis* (yarra gum) - FFG Act listed

The following fauna species have the potential to be impacted by construction activities (ELA and Entura 2021):

- *Petauroides volans* (southern greater glider) - EPBC Act and FFG Act listed
- *Galaxiella pusilla* (dwarf galaxias) - EPBC Act and FFG Act listed
- *Prototroctes maraena* (Australian grayling) - EPBC Act and FFG Act listed
- *Litoria raniformis* (growling grass frog) - EPBC Act and FFG Act listed
- *Thinornis r. rubricollis* (hooded plover) - EPBC Act, FFG Act and DELWP advisory listed
- *Engaeus phyllocercus* (Narracan burrowing crayfish) - FFG Act and DELWP advisory listed
- *Euastacus neodiversus* (South Gippsland spiny crayfish) - FFG Act and DELWP advisory listed
- *Engaeus hemicirratulus* (Gippsland burrowing crayfish) - FFG Act and DELWP advisory listed
- *Nannoperca* sp. 1 (Flinders pygmy perch) - FFG Act and DELWP advisory listed
- *Lissolepis coventryi* (swamp skink) - FFG Act and DELWP advisory listed
- *Pseudophryne semimarmorata* (southern toadlet) – FFG Act and DELWP advisory listed
- *Pseudemoia rawlinsoni* (glossy grass skink) - FFG Act and DELWP advisory listed
- *Ninox connivens* (barking owl) - FFG Act and DELWP advisory listed
- *Ninox strenua* (powerful owl) - FFG Act and DELWP advisory listed

In addition to the above, the survey area provides suitable habitat for a range of marine and/or migratory shorebirds including listed species such as *Actitis hypoleucos* (Common Sandpiper, EPBC Act listed marine/migratory), *Rhipidura rufifrons* (Rufous Fantail, EPBC Act listed marine/migratory) and *Myiagra cyanoleuca* (Satin Flycatcher, EPBC Act listed marine/migratory). However, the survey area has not been identified as an international important site for listed migratory shorebirds and is not directly contiguous with one (ELA and Entura 2021, Attachment 4).

Overall, likely areas of significant habitat for threatened fauna species include forest habitats located around plantations between Mirboo North and Hazelwood, waterways and waterbodies intersecting the survey area, and coastal forest, scrub, and beaches at Waratah Bay (particularly for threatened and EPBC listed migratory/marine species).

The potential impacts to terrestrial flora and fauna, ecological communities and migratory species will be further assessed as part of the detailed impact assessment to be completed for the project.

Is mitigation of potential effects on indigenous flora and fauna proposed?
☐ NYD ☐ No ☒ Yes If yes, please briefly describe.

MLPL is committed to implementing the avoid, mitigate and offset hierarchy. Mitigation measures will be implemented to reduce the scale, duration and/or intensity of impacts to indigenous flora and fauna values after avoidance measures have been put in place. These measures will be identified and refined during detailed assessments. Examples of mitigation measures to be implemented include:

- Use of HDD or other trenchless construction methods at targeted crossing sites e.g. at waterways and some areas of roadside vegetation.
- Reinstatement and rehabilitation of the construction corridor, temporary access and laydown areas to pre-construction uses, or as agreed with the landowner/s.
- Installation of ducts for both stages of the land cables and shore crossings for both 750MW stages as part of stage one, to allow the second stage cable lengths to be pulled through between joint bays at a future date, avoiding the need for additional excavation for stage two of construction.

An environmental management framework will be developed that will set out how mitigation measures will be implemented during construction and operation to reduce environmental impacts.

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

Desktop assessments have been based on historical records, many of which are decades old. Further detailed ecology assessment will be completed to enable a more accurate assessment of project impacts and identification of mitigation measures.

13. Water environments

Will the project require significant volumes of fresh water (eg. > 1 Gl/yr)?

☐ NYD ☒ No ☐ Yes If yes, indicate approximate volume and likely source.

Will the project discharge waste water or runoff to water environments?

☐ NYD ☒ No ☐ Yes If yes, specify types of discharges and which environments.

During construction, the project may need to discharge water that has accumulated in open excavations (i.e. trenching works). Water may be disposed onto several ways including irrigation, release into sewers, landholders' dams, paddocks or into watercourse. However, during project operation, no wastewater or runoff will be generated as a direct result of operations.

The converter station will incorporate stormwater management infrastructure to manage site runoff and discharge.

Are any waterways, wetlands, estuaries or marine environments likely to be affected?

☐ NYD ☐ No ☒ Yes If yes, specify which water environments, answer the following questions and attach any relevant details.

Figure 11 shows the waterways crossed by the proposed route. The proposed route traverses catchments north and south of the Strzelecki Ranges. The Morwell River and its tributaries drain the northern slopes of the ranges and the Tarwin River and its tributaries, the southern slopes and undulating plateau of the ranges.

The Morwell River discharges to the Latrobe River north of Morwell. The Latrobe River discharges to the Gippsland Lakes near Sale in Central Gippsland. The Morwell River is crossed north of Yinnar, west of Hazelwood Cooling Pondage. Major tributaries of the Morwell River crossed by the survey area are Little Morwell River near Darlimurla and Eel Hole Creek near Churchill. Eel Hole Creek is crossed where it enters Hazelwood Cooling Pondage.

The Tarwin River discharges to Andersons Inlet at Tarwin Lower east of Inverloch. Major tributaries of the Tarwin River crossed by the survey area are Tarwin River East Branch near Dumbalk, Stony Creek eat of Meeniyan and Fish Creek south of Buffalo.

Numerous farm dams and spring-fed soaks occur on the Strzelecki Ranges.

There are no wetlands of importance within 500 m of the proposed route. Shallow Inlet Marine and Coastal Park is located approximately 750 m east of the shore crossing at Waratah Bay, however no impacts on this wetland are anticipated.

There are no Ramsar wetlands within 10 km of the project, the closest being Corner Inlet, the very western edge of which is located approximately 11 km east of the project.

Marine environment
The main source of impacts to the marine environment from the project will be during the construction phase of the project, with noise and vibration impacts from the trenching and installation of subsea cables, and vessel and equipment operations.

In addition to noise and vibration, the installation process for the subsea cables has the potential to create turbidity plumes in the water column from water-jetting and/or trenching activities. The turbidity plumes that are generated will travel in the direction of prevailing currents near the seabed. Impacts from generated turbidity plumes are expected to be short-term, localised, and generally tolerated by most fish and invertebrate marine organisms. Overall, turbidity plume impacts on marine fauna are assessed to be negligible (EnviroGulf 2021, see Attachment 5).

Are any of these water environments likely to support threatened or migratory species?
☐ NYD ☐ No ☒ Yes If yes, specify which water environments.

Species which have populations recorded within or near intersecting waterways and riparian vegetation include *Galaxiella pusilla* (dwarf galaxias), *Prototroctes maraena* (Australian grayling), and *Litoria raniformis* (growling grass frog).

There is potential for these *Galaxiella pusilla* and *Prototroctes maraena* populations to be present in a number of waterways south of Buffalo to Morwell and intersected by the Area of Disturbance. These include Morwell River, Eel Hole Creek, Stony Creek, Little Morwell River, Berrys Creek, Tarwin River East Branch, and Fish Creek. These species have been recorded at several locations along the Tarwin River East Branch although not within the immediate vicinity of the route.

There are numerous (29) records of *Litoria raniformis* species within 10 km of the route. There is potential habitat within close proximity of the route in the form of permanent and ephemeral waterbodies such as farm dams, rivers, creeks, and lakes between Waratah Bay and Hazelwood. Specific locations include Fish Creek, Stony Creek, Tarwin River East Branch, Berrys Creek, Little Morwell River, Morwell River and Eel Hole Creek, and dams near Buffalo, Dumbalk-Stony Creek Road, South Gippsland Highway and Waratah Road.

Waratah Bay may support threatened, and listed marine and/or migratory species, as outlined in Section 12, including shorebirds and cetaceans.

Further detailed baseline studies will be undertaken to inform the impact assessment phase of the project, which will determine the extent and significance of impacts (if any).

Are any potentially affected wetlands listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'?
☐ NYD ☒ No ☐ Yes If yes, please specify.

Could the project affect streamflows?
☐ NYD ☒ No ☐ Yes If yes, briefly describe implications for streamflows.

Could regional groundwater resources be affected by the project?
☐ NYD ☒ No ☐ Yes If yes, describe in what way.

Could environmental values (beneficial uses) of water environments be affected?
☐ NYD ☒ No ☐ Yes If yes, identify waterways/water bodies and beneficial uses (as recognised by State Environment Protection Policies)

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

☐ NYD ☐ No ☒ Yes If yes, describe in what way.

Marine environment
The Marinus Link cables will be buried in sandy seabed using either a water-jetting machine or trenching machine to excavate, install and bury the cables. These methods cause localised disturbance of seabed habitats, which are generally sparse flora and fauna. The post-construction impacts to the seabed are unlikely to be visible after one year (Attachment 5), due to the natural backfill of sediment into the trench.

Overall, impacts to nearshore seabed and benthic community are anticipated to be negligible, based on the experience of similar past interconnector projects and the assessment of existing values (EnviroGulf 2021, Attachment 5).

Terrestrial (aquatic and estuarine) environment
The cable will be installed underground using a combination of trenching and directional drilling techniques, as required. In order to avoid impacts to major waterways and associated ecosystems, where geotechnical conditions permit, HDD or other trenchless construction methods will be used to bore beneath major waterways.

As such, there will be little interaction between the project route and the inland waterbodies, and there are no expected major effects on the health or biodiversity of aquatic and estuarine ecosystems.

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

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

Preliminary assessment (ELA and Entura 2021, Attachment 4) indicates that the impact footprint for each intersecting waterbody will be small and management measures have a high viability of avoiding impacts on populations (where confirmed present) during and after the construction phase. With the implementation of appropriate avoidance and mitigation measures to minimise pollution and/or transmission of pathogens, longer term impacts are not expected to be significant.

As outlined above, impacts to the nearshore marine ecosystem in Waratah Bay are expected to be short term only due to the short duration of construction activities and localised turbidity, based on the experience from a similar subsea transmission project in the region (EnviroGulf 2021, Attachment 5).

Options for the proposed converter station site have been chosen following a robust site options analysis, which included consideration of riverine and aquatic ecosystems. In addition, stormwater water management measures will be implemented as part of the design and construction of the converter station site to reduce potential impacts from stormwater runoff.

Is mitigation of potential effects on water environments proposed?

☒ NYD ☐ No ☐ Yes If yes, please briefly describe.

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

The assessment of water environments has been largely desktop, with some limited ground truthing. The extent of impacts will be further assessed as part of the detailed impact assessment to be completed for the project.

14. Landscape and soils

Landscape

Has a preliminary landscape assessment been prepared?

☒ No ☐ Yes If yes, please attach.

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

- **Subject to a Landscape Significance Overlay or Environmental Significance Overlay?**

  ☐ NYD ☐ No ☒ Yes If yes, provide plan showing footprint relative to overlay.

The proposed interconnector transverses the following Landscape Significance Overlays and Environmental Significance Overlays (see Figure 3):

Table 6 Landscape Significant Overlays and Environmental Significant Overlays in corridor

	Overlay	Length
Latrobe Planning Scheme		
ESO1	Environment Significance Overlay 1 – Urban buffer	2.15 km
South Gippsland Planning Scheme		
ESO1	Environment Significance Overlay 1 – Areas of natural significance	0.45 km
ESO2	Environment Significance Overlay 2 – Special water supply catchment areas	25.67 km
ESO3	Environment Significance Overlay 3 – Coastal settlements	3.35 km
ESO5	Environment Significance Overlay 5 – Areas susceptible to erosion	32.87 km
SLO3	Significant Landscape Overlay 3 – Corner Inlet Amphitheatre	7.61 km

- **Identified as of regional or State significance in a reputable study of landscape values?**

  ☒ NYD ☐ No ☐ Yes If yes, please specify.

- **Within or adjoining land reserved under the *National Parks Act 1975* ?**

  ☐ NYD ☒ No ☐ Yes If yes, please specify.

- **Within or adjoining other public land used for conservation or recreational purposes ?**

  ☐ NYD ☐ No ☒ Yes If yes, please specify.

Sections of the terrestrial route intersect with areas zoned for Public Conservation and Resource Zone (PCRZ) under the South Gippsland Shire and City of Latrobe Planning Schemes.

The PCRZ areas are designated for the protection and conservation of the environment for historical, biological, landscape or cultural values. Within the survey area, PCRZ areas are restricted to Crown land and are generally associated with areas of native and/or riparian vegetation values (see Figure 4).

Is any clearing vegetation or alteration of landforms likely to affect landscape values?

☒ NYD ☐ No ☐ Yes If yes, please briefly describe.

Potential impacts on landscape values from the underground cables will be limited to the construction phase as the land cables will be underground. It is unlikely that this component of the project will significantly affect landscape values, however there will be temporary visual changes to the landscape along the route during construction where vegetation is cleared and trenches are excavated.

The transition station at Waratah Bay and the converter station in the greater Hazelwood area may have an effect on landscape values, however these impacts will be reduced through the siting and design of the built form through the orientation/placement away from sensitive viewpoints.

The specific location and details of the transition station are still being investigated but will likely result in structures similar to a series of shipping containers at a height in keeping with the adjacent building (less than 3 m). The transition station will be located in farmland, away from sensitive coastal reserves and high value foreshore areas.

The converter station is not predicted to significantly alter the existing landscape values of the area given existing electricity infrastructure in the region, including overhead transmission lines and the Hazelwood Terminal Station.

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

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

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

The assessment of landscape values has been largely desktop, with some limited ground truthing. The extent of impacts will be further assessed as part of the detailed impact assessment to be completed for the project.

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

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

Soils

Is there a potential for effects on land stability, acid sulphate soils or highly erodible soils?
☐ NYD ☐ No ☒ Yes If yes, please briefly describe.

A geomorphological assessment of terrestrial alignments (Environmental GeoSurveys Pty Ltd 2019) completed for the project has assessed and summarised the landform, geology and soil conditions throughout the survey area.

Land cables will be laid in trenches of a nominal width of 1 m and minimum depth of 1.5 m. The excavation of trenches for land cables has the potential to affect soils within the easement through:

- Wind action on exposed surfaces.
- Active landslides areas and/or slope instability contributing to the susceptibility of landslip when subject to loading, including placement of structures and movement of heavy vehicles, and the stability of earth materials when exposed by excavation.
- Potential acid sulfate soils exposed during excavation of trenches.

Are there geotechnical hazards that may either affect the project or be affected by it?
☐ NYD ☐ No ☒ Yes If yes, please briefly describe.

The use of underground HVDC cabling technology for Marinus Link means that terrain and topographic features are significant factors in route selection and refinement. The Hoddle and Strzelecki ranges pose significant constraints to route selection due to the deeply incised valleys and steep slopes.

The geology of the area (weathered volcanics overlying sedimentary rock) results in zones of instability along the southern and northern slopes of the Strzelecki Ranges and in places on the plateau at the interface between the zones. This instability has resulted in slumping and landslides, which pose risks to land cables.

Extensive route selection has been undertaken to avoid potential geotechnical hazards (amongst a range of selection criteria, see Attachment 1).

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

The assessment is based on desktop level information only with some ground truthing of publicly accessible areas. Further detailed geomorphological assessment will be completed as part of the detailed impact assessment to be completed for the project.

15. Social environments

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

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

Marine environment
Marinus Link will cross several major shipping lanes to the southwest of Wilsons Promontory, and from Melbourne to Devonport, as well as a number of minor coastal shipping routes between Melbourne, Burnie and Launceston, in northern Tasmania. There will also be potential impacts on commercial and recreational fisheries during the construction phase of the project.

Potential impacts relate primarily to the moving temporary safety exclusion zone around each of the three cable-lay and burial ships during construction. It is also anticipated that several small "guard" vessels will be engaged during the installation process to monitor for maritime traffic and communicate with surrounding vessels as needed. Impacts will likely be temporary and not significant, however further consultation with fisheries and shipping stakeholders will be completed.

Terrestrial environment
Sections of the proposed route traverse or run alongside existing roads used by passenger vehicles, farming machinery and heavy vehicles. Trenching activities within or adjacent to roads is expected to cause disturbances to traffic during the construction period, however this will be temporary. HDD or alternative trenchless methods (e.g. auger boring) will be used to cross sealed roads, where geotechnical conditions permit, to avoid major disruption to traffic.

Further investigations will need to be completed to assess the impacts of construction traffic on road use, safety and capacity. This will be completed when further details on construction traffic numbers is available to inform detailed impact assessment of the project.

There are no anticipated increases to road traffic volumes associated with the project during operation as vehicles will only be required for infrequent maintenance activities or repairs.

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

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

Impacts from the project are considered most likely to occur during construction, due to the operation of machinery and excavation of land. Likely impacts include:

- Noise and dust emissions from machinery movements and disturbance of soils during trenching and cable burial.
- Noise and odour emissions from vehicle/machinery movements.
- Increased traffic volumes or temporary road closures for transportation of construction materials and equipment, workforce, etc.
- Changes to landscape and visual conditions from construction activities such as trenching, stockpiling, etc.

It is expected that construction impacts will be managed through standard controls and mitigation measures such as water carts to reduce dust, restricting construction activity hours, and implementing traffic management controls. The route has been selected to avoid being located close to sensitive receptors wherever possible. Therefore the project is unlikely to have a significant effect on residential amenity.

Operational impacts will be limited to infrequent vehicle movements and easement maintenance along the route as well as operation of the transition station and converter station, which will include some noise emissions. The design of the transition station and converter station will include consideration of siting and insulation to minimise noise emissions during operation.

Terrestrial environment
Noise and vibration emissions could result from trenching and backfilling during construction, and trenchless construction such as HDD. Noise can also result from ground disturbance activities associated with the clearing and reinstatement of the construction corridor, general earthworks, loading and unloading materials, and vehicle movements within the construction corridor.

As construction activities are unlikely to be at one location for long periods, the noise impacts will be temporary except for the converter station. The proponent will work closely with affected residents to minimise impacts from noise during construction and works planning will take into account the potential nuisance noise levels.

No odours are expected from construction or operation of the project.

For the land cables, potential visual effects will only occur for a short period of time during the construction/installation phase. Given the cables will be underground, it is unlikely that this portion will have visual impact however there will be temporary visual changes to the landscape along the ultimate cable route during construction where vegetation is cleared. The construction corridor, temporary access and laydown areas will be reinstated and rehabilitated to pre-construction uses, or as agreed with the landowner/s.

The converter station will typically occupy an area of 6 ha with building dimensions of 260 m by 224 m. An area of up to 16 ha may be required to accommodate construction requirements. The transition station at Waratah Bay will likely resemble a number of shipping containers within an area 70 m by 50 m. These structures will alter the existing visual conditions at those locations, however mitigation measures such as siting and design of the built form (e.g. orientation/placement away from sensitive viewpoints, colour of materials used, etc.) will be used to reduce impacts where feasible.

It is expected that as the changes to traffic conditions will be temporary during construction, there will be no significant impact on the amenity of the residents or use of existing road network.

Is there a potential for exposure of a human community to health or safety hazards, due to emissions to air or water or noise or chemical hazards or associated transport?
☐ NYD ☒ No ☐ Yes If yes, briefly describe the hazards and possible implications.

There will be high voltage electricity hazards in proximity to the converter station, including fatal consequences from human interaction with electricity, however the risk will be assessed and mitigated through occupational health and safety practices to restrict public proximity and interaction with electricity infrastructure.

Landowners impacted by the proposed route have been informed of the likely restrictions (if any) to land use within the easement (e.g. deep excavations) to avoid potentially catastrophic interactions with HVDC infrastructure (e.g. electrocution).

Is there a potential for displacement of residences or severance of residential access to community resources due to the proposed development?
☐ NYD ☒ No ☐ Yes If yes, briefly describe potential effects.

The use of underground HVDC cables for the land sections will minimise land use impacts during operation. The construction corridor, temporary access and laydown areas will be reinstated and

rehabilitated to pre-construction uses, or as agreed with the landowner/s to reduce impacts on land uses.

Specific land use impacts during construction will be managed through engagement with each landowner and identification of specific measures to protect land use and access for the construction period.

No residences will be cut off from community resources during construction or operation of the project.

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

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

The terrestrial portion of the proposed route is largely situated on agricultural land. The construction corridor, temporary access and laydown areas will be reinstated and rehabilitated to pre-construction uses, or as agreed with the landowner/s so that most existing land use activities can resume following construction. As the construction area will be narrow there limited disruption to or displacement of agricultural land use during the construction phase.

Extensive hardwood and softwood plantations occur along the northern slopes of the Strzelecki Ranges. Where the proposed route traverses plantation properties, existing firebreaks and/or forestry tracks are proposed to be utilised where possible to minimise impacts to production.

The proposed converter station will be located at one of two potential sites: at Driffield within special use zoned land currently used for forestry plantation, or at Hazelwood within land zoned for farming adjacent to the existing Hazelwood Terminal Station. The property on which the ultimate converter station will be constructed will be owned by the proponent.

The use of HDD at the shore crossing, from approximately 1 km offshore to freehold land behind the dunes, would avoid direct impacts to the beach. Although the beach at Waratah Bay is not anticipated to be closed during construction, management of public safety concerns may require this at the time, in which case disruption would be temporary.

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

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

As mentioned above, the potential impacts on the land use activities may occur at the shore crossing. Although the beach at Waratah Bay is not anticipated to be closed during construction, management of public safety concerns may require this at the time, in which case disruption would be temporary.

Is mitigation of potential social effects proposed?

☐ NYD ☐ No ☒ Yes If yes, please briefly describe.

Marinus Link is proposed to offer the following key social and economic benefits to the region and Victoria:

- Increase energy exchange capacity will unlock renewable energy generation opportunities and cost-effective energy storage, and support affordable, reliable and clean energy in Victoria, Tasmania and beyond.
- Increased energy security and network resilience.
- Allow excess energy generated in Victoria to be transferred to Tasmania to be stored in pumped hydro energy storage facilities.
- Enable an increase in renewable energy generation to the NEM from Tasmania.
- Support Victoria's new energy transition in the Latrobe Valley and contribute the growth of the renewable energy industry in the Gippsland region.
- Support Victoria's Renewable Energy Targets, by enabling the NEM to save at least 70 million tonnes of carbon dioxide by 2040.
- Up to $1.5 billion economic stimulus during construction and operation.
- 1,400 direct and indirect jobs at peak construction.

As part the impact assessment for the project, a social impact assessment will be completed, which will involve engagement with communities and other stakeholders to understand existing community values and concerns relating to the project. An assessment of social impacts to these values will be conducted, and site and project-specific mitigation measures and controls are to be developed and implemented to reduce impacts where practicable.

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

The assessment of social values has been largely desktop, with some limited ground truthing. The extent of impacts will be further assessed as part of the detailed impact assessment to be completed for the project.

Cultural heritage

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

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

Engagement with the native title holders and Traditional Owners with interests in the Victorian portion of Marinus Link have commenced, and include:

- Gunaikurnai people, particularly the Brataualung people of South Gippsland. The Gunaikurnai peoples land extends from Warragul to west of the Snowy River in East Gippsland. The Gunaikurnai are spread throughout their lands, with major communities at Jacksons Track near Warragul and Lake Tyers near Bairnsdale. The Gunaikurnai people are represented by Gunaikurnai Traditional Owner Land Management Board and Gunaikurnai Land and Waters Aboriginal Corporation.
- Bunurong people of the Southeastern Kulin Nation. The Bunurong peoples land extends from Port Phillip Bay to near Inverloch. However, they also claim traditional ownership of lands between Inverloch and Wilson Promontory. These people are mainly located on the Mornington Peninsula and along the Bass Coast. The Bunurong people are represented by the Bunurong Land Council Aboriginal Corporation.
- Boonwurrung people. The Boonwurrung people also assert interests in land extending from Port Phillip Bay to and including Wilsons Promontory.

In addition to the above, the proponent has and will continue to engage with First Peoples – State Relations (formerly Aboriginal Victoria).

An Indigenous Engagement Strategy will be prepared for the project to guide ongoing engagement with these Indigenous groups and those in Tasmania.

What investigations of cultural heritage in the project area have been done?
(attach details of method and results of any surveys for the project & describe their accuracy)

A preliminary cultural heritage assessment (ELA and CHMA 2021) (Attachment 6) has been completed for the project. A desktop assessment was undertaken using database and literature sources including:

- Victorian Aboriginal Heritage Register (VAHR)
- Victorian Aboriginal Places Register (VAPR)
- Victorian Heritage Register (VHR)
- Victorian Heritage Inventory (VHI)
- Victorian Heritage Database (VHD)

In addition to the above, Aboriginal elders and other Indigenous community representatives accompanied Marinus Link representatives on an inspection of the proposed route and provided advice on whether there were any potential fatal flaws in relation to cultural heritage values. No fatal flaws were reported, and the representatives noted that Aboriginal cultural heritage would exist on and near the routes, as artefact scatters and story lines, particularly at the coast but also along and near inland watercourses.

Is any Aboriginal cultural heritage known from the project area?

☐ NYD ☐ No ☒ Yes If yes, briefly describe:

- Any sites listed on the AAV Site Register
- Sites or areas of sensitivity recorded in recent surveys from the project site or nearby
- Sites or areas of sensitivity identified by representatives of Indigenous organisations

A search of the Victorian Aboriginal Heritage Register identified 50 registered Aboriginal cultural heritage places with the Victorian regional study area, 11 of which are located within the survey area (Attachment 6). Registered places within the regional study area included 39 artefact scatters, six low-density artefact distributions, three scarred trees, three earth features, three shell middens and two quarries. A complete list of these can be found in Attachment 6.

The 11 registered sites within the survey area consist of nine artefact scatters, one quarry and one low-density artefact distributions. The eleven registered places intersected by the survey area occur at three primary locations:

- within 1 km of the Waratah Bay coastline, in close proximity to Waratah Road
- south-west of Driffield, along the Strzelecki Highway and Kings Road
- in the south-eastern portion of the Hazelwood Cooling Pond.

The clustering of registered places into three discrete locations should not be taken as definitive evidence of the true range and distribution of Aboriginal cultural heritage values across the survey area, as it is likely to be the result of a lack of archaeological surveys having been conducted in this area. Further surveys are proposed as part of the detailed assessment of the project to better understand the nature and location of Aboriginal cultural heritage values in relation to proposed project infrastructure, and therefore the potential for significant impacts. Specific avoidance and/or management measures will be established based on the outcomes of further detailed assessment/s.

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

☐ NYD ☒ No ☐ Yes If yes, please list.

No places of national, state, regional or local historical heritage significance are located within the survey area (Attachment 6).

Substantial sections of the route traverse greenfield areas where the potential for significant historical places to occur is limited given the predominant use of the land for agricultural and pastoral activities (ELA and CHMA 2021).

Is mitigation of potential cultural heritage effects proposed?

☐ NYD ☐ No ☒ Yes If yes, please briefly describe.

It is considered unlikely that Marius Link will result in disturbance to European or historic heritage sites, however further detailed assessment will be completed to confirm the extent of impacts (if any). If cultural heritage effects are considered likely, avoidance and/or management measures will be implemented based on the nature and extent of values and likely impacts. Possible measures that may be applied include micro-siting project infrastructure to avoid identified values, or suitable excavation and relocation of values in line with relevant approvals under the *Heritage Act 2017* (Vic).

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

A number of limitations need to be considered when evaluating the results of the Victorian Aboriginal cultural heritage register searches (Attachment 6). Many of the registered site identified in proximity to the study areas are early recordings, which predate the use of modern GPS units. Therefore potential errors should be investigated and potentially rectified during further assessments for the project. Additionally, the register search provides only a single coordinate for the registered sites, yet the actual spatial boundaries of these sites may be significant larger.

Another limitation is that the currently registered sites reflect locations where previous field surveys have been completed. The absence of known sites from any area may simply reflect a lack of previous fieldwork in that area, rather than an actual lack of sites.

16. Energy, wastes & greenhouse gas emissions

What are the main sources of energy that the project facility would consume/generate?

- [x] Electricity network. If possible, estimate power requirement/output ……
- [ ] Natural gas network. If possible, estimate gas requirement/output ……...
- [ ] Generated on-site. If possible, estimate power capacity/output ……
- [ ] Other. Please describe.

Please add any relevant additional information.

What are the main forms of waste that would be generated by the project facility?

- [ ] Wastewater. Describe briefly.
- [ ] Solid chemical wastes. Describe briefly.
- [x] Excavated material. Describe briefly.

The main wastes generated from the project will be excavated material from trenching and earthworks for the converter station. Trenches will be backfilled and excavated waste is expected to be minimal.

- [ ] Other. Describe briefly.

Please provide relevant further information, including proposed management of wastes.

What level of greenhouse gas emissions is expected to result directly from operation of the project facility?

- [x] Less than 50,000 tonnes of CO_2 equivalent per annum
- [ ] Between 50,000 and 100,000 tonnes of CO_2 equivalent per annum
- [ ] Between 100,000 and 200,000 tonnes of CO_2 equivalent per annum
- [ ] More than 200,000 tonnes of CO_2 equivalent per annum

Please add any relevant additional information, including any identified mitigation options.

17. Other environmental issues

Are there any other environmental issues arising from the proposed project?

- [ ] No
- [x] Yes If yes, briefly describe.

All electricity cables emit varying levels of electric and magnetic fields (EMF). As proposed for Marinus Link, bundling cables has the effect of largely cancelling out magnetic fields generated by the electrical current flowing in the cables.

For the terrestrial cables, Marinus Link's EMF is proposed to be below the international guidelines recommended by the International Commission of Non-Ionizing Radiation Protection, which have been adopted by the Australian Radiation Protection and Nuclear Safety Agency.

For the marine cables, substantial research has been undertaken into the effects of EMF on marine fauna which show the impacts are not likely to be significant. A review of other interconnectors that use symmetrical monopole technologies was completed. As referred to in Attachment 5 (EnviroGulf 2021), a 2018 study concluded that "to date, there is no demonstrable impact (negative or positive) of EMF related to subsea cable energy emissions on EM-sensitive species". Assuming similar or less field strengths than Basslink and similar burial depth, impact from EMF on marine fauna are not anticipated to be significant (Attachment 5).

Publicly available research has found that although EMF can interfere with marine fauna with electroreceptors (e.g. sharks and cartilaginous fish) and some marine mammals, the research shows that the impacts are not considered to be significant (see Attachment 5).

Methods to reduce EMF strength from subsea cable that have been adopted for the project are:

- Cable configuration**:** by placing the cables closer together, i.e. bundled, there is a greater mutual cancellation of EMFs. The cables for Marinus Link will be bundled (two times bundled cables). Closer cables also increase the rate at which the magnetic field diminished with distance from the cables.
- Burial depth: cables buries at least 1 m reduce magnetic fields at the seabed and reduce the strength of induced electric fields. Lower strength electric and magnetic fields at the seabed are less likely to be detected by marine fauna or affect their behaviour.

18. Environmental management

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

☒ Siting: Please describe briefly

MLPL is committed to implementing the avoid, mitigate, offset hierarchy.

Avoidance

For linear infrastructure like Marinus Link, route selection offers the best opportunity to avoid impacts on environmental and social values. The proposed route for Marinus Link is the culmination of a comprehensive route and site selection process that has considered technical, environmental, cultural and social constraints. Avoidance of significant impacts on existing infrastructure, environmentally sensitive areas including threatened species habitat and threatened ecological communities, and land use was a key objective and is the primary mitigation for linear infrastructure.

Other avoidance measures implemented to reduce impacts from the project include:

- Use of underground HVDC technology for the onshore cable component of Marinus Link within Victoria.
- Use of a single shore crossing is proposed in Victoria. It is proposed the shore crossing will be constructed by way of HDD, which will extend up to 1 km offshore or to 10 m water depth. The intention of this approach is to avoid and reduce impacts to sensitive coastal dune habitats at Waratah Bay and the Waratah Bay-Shallow Inlet Coastal Reserve.
- Micro siting joint pits and other infrastructure to avoid ecological values where practicable.
- Where possible, use of existing roads and tracks for access, avoiding the need to construct new access tracks.
- Using cleared sites with no significant environmental values for laydown areas where practicable.
- Sourcing quarry material, concrete and other construction materials from existing licensed facilities where practicable avoiding the need to construct new facilities.
- Narrowing the indicative construction area of disturbance in some areas to avoid impacting vegetation and to provide sufficient clearance to avoid tree protection zones.
- Locating the transition station in farmland, away from sensitive coastal reserves and high value foreshore areas.
- Locating the converter station in an area with existing electricity infrastructure
- Bundling cables closer together so there is a greater mutual cancellation of EMFs.
- Burying cables at least 1 m in the seabed to reduce magnetic fields.

Mitigation

Measures will implemented where practicable to reduce the scale, duration and/or intensity of impacts on environmental values.

Proposed mitigation measures include:

- Reduction of impacts to vegetation through the proposed use of HDD or other trenchless construction methods at targeted crossing sites (e.g. at waterways, sealed roads, areas of roadside vegetation, etc.).

- Reinstatement and rehabilitation of the construction corridor, temporary access and laydown areas to pre-construction uses, or as agreed with the landowner/s.
- Micro siting joint pits and other infrastructure to avoid ecological values where practicable.
- Installation of the ducts for both 750MW stages at the shore crossing and for land cables as part of stage one, to allow the second stage cable lengths to be pulled through between joint bays at a future date, avoiding the need for additional excavation for stage two of construction.
- Siting and design of the built form of the converter station and potential transition station to reduce landscape impacts e.g. orientation/placement away from sensitive viewpoints, colour of materials used.
- Reducing the height of the potential transition station to be in keeping with the adjacent building (less than 3 m).

Offsets
Measures to offset impacts on the environment following the implementation of avoidance and mitigation measures will be identified following completion of the detailed impact assessment. Offsets will be implemented in accordance with the requirements of Victorian and Commonwealth guidelines.

☒ Design: Please describe briefly

The majority of the project will be located beneath the seabed or underground, substantially reducing the potential for visual impact of the project. Where practicable, built form for the converter station and transition station will be designed to minimise disruption to the landscape.
The bundled symmetrical monopole as described in Section 17 will reduce EMF effects to marine life in the offshore portion of the project.

☒ Environmental management: Please describe briefly.

MLPL is committed to the sustainable conduct of its activities, and is developing a project-specific environment policy. This policy will include a commitment to minimise impacts on the environment from the project.
An environmental management framework will be developed as part of future assessment of environmental impacts to describe how the management measures will be implemented to reduce adverse environmental effects from the project.
The framework will include:

- Objectives and targets for environmental management.
- Roles and responsibilities in relation to environmental management of the project.
- Environmental compliance requirements.
- Environmental management practices and procedures to be implemented.
- Requirements for inspections and compliance monitoring.
- Advice on relevant sub-plans needed such as traffic management plan, noise and vibration management plan, weed and pathogen management plan and erosion and sediment control plan.
- Management protocols for specific species and activities.

☐ Other: Please describe briefly

Add any relevant additional information.

19. Other activities

Are there any other activities in the vicinity of the proposed project that have a potential for cumulative effects?
☐ NYD ☐ No ☒ Yes If yes, briefly describe.

The proponent understands that a separate referral to DELWP has been made for the proposed Delburn Wind Farm, in the Strzelecki Ranges to the south of the Latrobe Valley. This project is located in the vicinity of the northern extent of the Marinus Link project. The recent determination by the Minister was that no EES was required, with conditions.

Although construction timelines for the two projects are not aligned, cumulative impacts associated with the Delburn Wind Farm project and the Marinus Link project have the potential to occur. These impacts may include (but are not limited to) the removal of similar vegetation types including potentially significant EVCs or habitat, further visual impacts/changes to the local landscape (limited to the converter station for Marinus Link), and social impacts such as development fatigue in the community.

The Star of the South offshore windfarm is proposed on the south coast of Gippsland, on the opposite side of Wilsons Promontory National Park to Marinus Link. Transmission infrastructure is proposed from Reeves Beach to Hazelwood. The majority of the infrastructure for Star of the South is a substantial distance from Marinus Link, however both projects propose connecting to the grid near Hazelwood. There is potential for minimal cumulative impacts from the transmission infrastructure near Hazelwood.

20. Investigation program

Study program

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

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

Has a program for future environmental studies been developed?

☐ No ☒ Yes If yes, briefly describe.

Further studies are proposed to be undertaken to support the detailed assessment of the project, and will be targeted to the key issues relating to the project.

It is anticipated that assessments will include:

- Agriculture
- Air quality
- Contaminated land and acid sulfate soils
- Cultural heritage
- Economics
- Electromagnetic fields
- Geomorphology and geology
- Greenhouse gas emissions
- Groundwater
- Hydrology
- Landscape and visual impact assessment
- Land use and planning
- Marine benthic ecology
- Marine ecology and resource use
- Maritime heritage and archaeology
- Noise and vibration (terrestrial and marine)
- Social impact assessment
- Sustainability
- Terrestrial ecology
- Traffic and transport
- Waste management

Consultation program

Has a consultation program conducted to date for the project?

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

MLPL recognises the importance of engaging early to understand what is important to stakeholders and the local community. Early engagement allows issues to be addressed during the development phase of the project and can lead to less issues arising during construction. The project team has been engaging with stakeholders and the community in both Tasmania and Victoria since July 2018. The objectives of this phase of engagement were to:

- Raise awareness about the project
- Support the Feasibility Study, Business Case Assessment and Regulatory Investment for Transmission (RIT-T) processes
- Provide information about the proposed route for Marinus Link and why it was chosen, and consult with landowners to minimise impacts on their properties.

Engagement throughout this phase included meetings, workshops and information sessions as well as regular print and digital communications. To date, the project has consulted with:

- Councils
- State government agencies
- Indigenous groups in Victoria including native title holders and Traditional Owners
- Landowners impacted by the proposed route
- Community groups
- Local community members
- Industry organisations
- Local economic and land management authorities.

The first phase of engagement took place over an 18-month period between July 2018 and December 2019. This phase was largely focused around raising awareness of the project and informing stakeholders about the Feasibility Study, Business Case Assessment and RIT-T processes.

In November 2020, the proponent started engagement with Gippsland landowners to introduce Marinus Link and consult around the proposed route. Engagement focused on face-to-face meetings, with several landowners also taking the opportunity to drop-in at the public community information sessions and webinar.

Engagement with the broader Victorian public started in early 2021 and focussed on raising awareness of the project, capturing feedback on the proposed route and promoting the benefits for Victoria. Awareness raising activities included four face-to-face information sessions, a stall at the Farm World Exhibition, a community webinar and the launch of an interactive map where community members could leave feedback.

In early 2021, Marinus Link held four community information sessions, set-up a stall at the Farm World agricultural show and hosted a virtual webinar. The events were attended by both landowners impacted by the proposed route and the broader community. A summary of the attendance and areas of interest at these events is provided below:

Table 7 Summary of engagement attendance

Event	Attendance	Areas of community interest
Sandy Point Information Session Feb 2021	35	Construction impacts Foreign ownership Location of route Project funding
Mirboo North Information Session Feb 2021	90	Environment Jobs Local benefits Project funding Transition to renewable energy

Meeniyan Information Session March 2021	30	Project funding Foreign ownership Location of route Construction impacts
Morwell Information Session March 2021	20	Construction methodology/impacts Cost to customers Jobs Ongoing maintenance Project timeline Technical details
Farm World Information Stall March 2021	200	Construction methodology Enabling Tasmania's renewable energy resources Jobs Location of route Project timelines and approvals Reinstatement Technical details of cables Transition for Gippsland
Webinar Feb 2021	26	Connection to renewable energy developments Converter station details (cost, size) Construction staging Consultation process to date Cost benefit EES process Future land use Location of route Underground vs overhead transmission

Landowner engagement
MLPL has engaged with 107 private landowners in Victoria to date. Landowner engagement has focused on raising awareness about the project, gathering feedback on the proposed route and seeking agreement to access land to undertake the necessary environmental assessments and surveys. During meetings, landowners have raised the following items as issues they are concerned about:

- Commercial disruption, particularly potato and dairy farmers
- Restrictions on future sub-division of land
- Timeframe for construction and associated disruption
- Potential disruption because of electromagnetic radiation
- Having permanent infrastructure running through their land.

The majority of landowners are either supportive of the project or neutral. Some landowners have negative sentiment towards the project including concerns about having infrastructure on their land.

Landowner engagement is also being progressed with forestry operator Hancock Victorian Plantations and Crown Land managers.

Other stakeholder engagement
MLPL has also consulted with a range of other stakeholders including state government agencies, economic development and land management authorities and industry bodies. Engagement will continue with these stakeholders throughout the projects.
Stakeholders include:

- Gippsland Trade and Labour Council
- Australian Manufacturing Workers' Union

- Industry Capability Network
- Committee of Gippsland
- Victorian Farmers Federation
- LaTrobe Valley Authority
- Social traders
- Regional Development Australia – Gippsland Committee
- GROW Gippsland
- Victorian Fisheries Authority
- Seafood Industry Victoria
- South East Trawl Fishing Industry Association
- AusNet
- Star of the South
- OSMI (Delburn Wind Farm)

How feedback is being considered
The project has reviewed the feedback and implemented changes to public facing communications to simplify project information, as well as creating materials like fact sheets and infographics to break down complex topics.

MLPL will continue regular meetings with landowners to help build trust, increase understanding of the project and discuss what management measures can be implemented to address landowner concerns.

Has a program for future consultation been developed?
☐ NYD ☐ No ☒ Yes If yes, briefly describe.

The proponent is in the process of developing a Stakeholder Engagement Strategy to guide initial and ongoing consultation with key stakeholders, landowners and the broader community. Further advice on planned engagement for the project is provided below or can be found at https://www.marinuslink.com.au/.

Detailed Communications and Engagement Plans will be prepared for each phase of the project. Engagement over the next 12 months will aim to raise awareness about the project, build relationships and support the assessment and approval processes, including promoting opportunities for community consultation.

While the project is not yet at the stage where an EES requirement has been confirmed, for planning purposes, the project is assuming one will be required.

Detailed communications and engagement plans will be produced pending confirmation of the planning and approvals pathway. While opportunities for public consultation may change should an EES not be required, engagement activities and proposed methods will continue throughout the duration of the project.

Planned engagement activities include:
- Community pop-up sessions
- Webinars
- Meetings with landowners
- Briefings and presentations to key stakeholders
- Establishment of a Stakeholder Liaison Group

Authorised person for proponent:

I, ... SEAN Mc GOLDRICK ..... (full name),

..... DIRECTOR MLPL .....(position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature Sean McGoldrick

Date 16.9.21.

Person who prepared this referral:

I, ... Katherine Gvard ..... (full name),

Environment & Planning Lead .....(position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature K. Gvard

Date 16/9/21

Figures