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:	**AusNet Transmission Group Pty Ltd (AusNet)**
Authorised person for proponent: **Position:** **Postal address:** **Email address:** **Phone number:** **Facsimile number:**	Malcolm Tinkler General Manager, Western Renewables Link PO Box 638 Ballarat Vic 3350 info@westernrenewableslink.com.au 1300 360 795 Not applicable
Person who prepared Referral: **Position:** **Organisation:** **Postal address:** **Email address:** **Phone number:** **Facsimile number:**	Carolyn Balint Approvals Manager AusNet Transmission Group Pty LTD PO Box 638 Ballarat Vic 3350 info@westernrenewableslink.com.au 1300 360 795 Not applicable
Available industry & environmental expertise: (areas of 'in-house' expertise & consultancy firms engaged for project)	AusNet Services AusNet Transmission Group Pty Ltd (AusNet) is the largest energy network business in Victoria, owning and operating three regulated networks – electricity distribution, gas distribution and the state-wide electricity transmission network, including the existing western Victoria transmission network. Headquartered in Melbourne, AusNet employs around 1,900 people to service 1.4 million consumers. AusNet has in-house planning and environmental impact assessment expertise including a team of eleven responsible for managing the environmental assessments for the Western Renewables Link (**the Project**), as part of the broader Project team. Jacobs Group (Australia) Pty Ltd Jacobs is a large full services consultancy who are supporting AusNet in providing a comprehensive suite of technical consulting services to support the Western Renewables Link. These services include planning and approvals, terminal station design, cultural heritage, ecology, landscape and visual, hydrology, geotechnical, survey and spatial amongst other services.

2. Project – brief outline

Project title:
Western Renewables Link (**WRL**) (formerly the Western Victoria Transmission Network Project or WVTNP)

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)

The Area of Interest, as shown in the overview plan in Attachment A, is located in central and western Victoria. The Area of Interest has been developed to allow for the assessment of potential alignments for a new 500kV double circuit overhead transmission line and associated connection and construction works between Bulgana (north of Ararat) in Victoria's west and Sydenham in Melbourne's north-west.

At its westernmost point, the Area of Interest comprises an area around the existing Bulgana Terminal Station for investigation into a new 500kV switchyard and associated equipment required for the Project. Heading east, the Area of Interest includes an area where the transmission line is proposed to run parallel to the existing Bulgana to Waubra 220kV transmission line. From the Waubra Terminal Station, the Area of Interest widens to accommodate a transmission line running on an east-west axis and ultimately connecting into Sydenham Terminal Station in Melbourne's north-west.

The footprint of the constructed Project would ultimately be much smaller than the Area of Interest. A proposed route has been identified within the Area of Interest based on a range of desktop studies, field work (where accessible), ground-truthing, landholder, community and stakeholder input, and constructability and technical considerations. This proposed route was announced by AusNet in November 2021 and an updated proposed route was announced in August 2022.

The proposed route will continue to be assessed and refined, considering landholder and community input and environmental and technical considerations, as part of the assessment and approvals process for the Project.

This referral is based on the potential impacts of the Project in relation to the broader Area of Interest. It therefore describes potential impacts that are more extensive than would be expected in relation to the actual Project footprint. AusNet nevertheless considers that the nature and extent of the Project warrants the making of this referral and the preparation of an Environment Effects Statement.

Short project description (few sentences)**:**
The Project includes the construction, operation and decommissioning of a 500kV double circuit overhead transmission line between Bulgana in Victoria's west and Sydenham in Melbourne's north-west. To support the connection of the new transmission line construction of a new 500kV switchyard and associated equipment near to the existing Bulgana Terminal Station is proposed. Project works will also be required to enable connection of the transmission line into the Sydenham Terminal Station. Other upgrades at Elaine, Bulgana and Ballarat terminal stations are also proposed to facilitate the Project.

In June of 2020, a referral was made by AusNet to the former Minister for Planning under the *Environment Effects Act 1978* (**2020 Referral**). The 2020 Referral related to a proposal for the construction, operation and decommissioning of a high voltage transmission powerline connecting the existing terminal station at Bulgana with a new terminal station to be built north of Ballarat, and a new terminal station adjacent to the existing terminal station at Sydenham. The new transmission line was proposed to operate at 220kV between Bulgana and the new terminal station to be built north of Ballarat, and at 500kV between the new terminal station north of Ballarat and a new terminal station at Sydenham. The project also included upgrades to existing terminal stations at Bulgana, Elaine and Ballarat.

In August of 2020 the Minister for Planning determined that an EES was required for the project contemplated by the 2020 Referral. AusNet subsequently commenced the preparation of an EES pursuant to the Scoping Requirements issued by the Minister for Planning.

Since the 2020 Referral was made, the form of the Project has changed, for the reasons described in Section 3 (Project Description) of this referral. As a result, AusNet is submitting this new referral for the Project to seek a new decision from the Minister for Planning on the assessment requirements.

3. Project description

Aim/objectives of the project (what is its purpose / intended to achieve?):
The Project is intended to meet the identified need described by the Australian Energy Market Operator (**AEMO**) in the Western Victoria Renewable Integration Project Assessment Conclusions Report, dated July 2019 (**WRL PACR**). The Project is also intended to facilitate better and more reliable interconnection of the declared transmission system consistent with the Victoria to New South Wales Interconnector West Project Assessment Conclusion Report, dated May 2023 (**VNI West PACR**).

More specifically, the Project is intended to increase transmission network capacity, address current limitations in the western Victoria transmission network and facilitate the efficient connection of new renewable electricity generation in western Victoria into the National Electricity Market (**NEM**).

Background/rationale of project (describe the context / basis for the proposal, e.g., for siting):
The need for the Project is described in detail in documents prepared by AEMO, in their capacity for planning Victoria's electricity system. These documents include every Victorian Annual Planning Report since 2016 and documents prepared as part of the Western Victorian Regulatory Investment Test for Transmissions (**RIT-T**) for augmentation of the transmission system in north-west Victoria.

A stronger interconnected electricity system, including new transmission projects, is required to increase resilience against a changing climate, outages, thermal, voltage and stability constraints. The Project aims to increase electricity transmission capacity in western Victoria and reduce congestion on the existing transmission network.

AEMO's Western Victorian RIT-T identified a need to increase the capability of the Western Victoria power system, to reduce constraints on projected new generation in western Victoria. As part of the RIT-T process, alternatives to address the 'need' or problem were investigated by AEMO and documented in several reports, namely the WRL PACR. The WRL PACR described the preferred solution 'Option C2', as a new double circuit 500kV transmission line from Sydenham to North Ballarat, and a new 220kV double circuit transmission line from North Ballarat to Bulgana (via Waubra), together with minor transmission line upgrades.

The 2020 Referral was based on the preferred solution identified by AEMO as part of the WRL RIT-T, and the requirements of the invitation to tender issued by AEMO for the project, which included the construction of a new terminal station at Sydenham to avoid potential interface issues and outages associated with construction within the existing operational Sydenham Terminal Station site.

Since the 2020 Referral, the construction of a new terminal station north of the existing Sydenham Terminal Station now no longer forms part of the Project, though the Project will still need to connect into a terminal station at that location. The Project in effect only needs a connection into a fully functioning Sydenham Terminal Station.

The existing Sydenham Terminal Station is part of the main 500kV transmission network in Victoria and is integral to power supply to Melbourne. Sydenham Terminal Station also acts as a key connection between western Victoria to Melbourne and to South Australia via the Heywood Terminal Station. The Sydenham Terminal Station 500kV outdoor gas insulated switchgear (**GIS**) equipment is approaching its end of life and must be replaced as soon as possible. The GIS is integral to the terminal station as it performs the function of switching, measuring and distributing electrical energy. The condition of the 500kV GIS has deteriorated to a level where there is a material risk of asset failure, which could impact on electricity supply reliability, generation cost,

safety, environment, and collateral damage. The Sydenham Terminal Station therefore needs to be re-built.

Due to delays to the WRL Project, the asset replacement works for Sydenham Terminal Station must be delivered prior to the WRL works to maintain reliable transmission services in Victoria. The WRL works require the connection and construction of a bay at the terminal station to function.

A terminal station to replace and rebuild the existing Sydenham Terminal Station is a separate project, known as the Sydenham Terminal Station Rebuild. The works for the Sydenham Terminal Station Rebuild are primarily within the special use zone, on land owned by AusNet or within existing easements. Site investigations undertaken for ecology and cultural heritage found that the Sydenham Terminal Station site currently exists as a highly disturbed and modified landscape, resulting from both the historical agricultural (grazing and cropping) land use the area experienced prior to the terminal station's development and the more recent (post 1980's) development of the existing terminal station.

The technical studies undertaken for the purposes of the Project contemplated by the EES required under the Minister for Planning's 2020 decision, namely ecology, cultural heritage, surface water and contaminated land, show that the Sydenham Terminal Station Rebuild does not have the potential to cause significant environmental impacts that would warrant assessment under the *Environment Effects Act 1978*. The rebuild will be subject to a separate planning approval pathway.

The other proposed changes to the form of the Project include uprating the WRL from 220kV to 500kV from Mount Prospect to Bulgana (i.e., a 500kV project from Sydenham to Bulgana). A key function of the terminal station previously proposed at Mount Prospect was to switch the voltage from 220kV to 500kV however the specification for an uprate made a requirement for a terminal station at this location redundant. The 500kV uprate was identified by AEMO as part of the VNI West RIT-T, following an order from the Minster for Energy and Resources, responsible for administering the *National Electricity (Victoria) Act 2005* (No. S60, dated 20 February 2023 the **February NEVA Order**), conferring on AEMO the function to evaluate alternative options to connect VNI and the WRL. A further NEVA Order (No. S 267 dated 27 May 2023 the **May NEVA Order**) confirmed the uprated capacity as the preferred option for the WRL. The form and components of the Project are defined in Schedule 2 of the May NEVA Order.

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

- Construction and operation of approximately 190km of new 500kV overhead double circuit transmission line between a new 500kV switchyard near to the existing Bulgana Terminal Station and the Sydenham Terminal Station. The main tower configuration for the Project is double circuit steel lattice towers. The height and span of the towers may vary.
- A new 500kV switchyard and associated equipment[1] will be required near to the existing Bulgana Terminal Station.
- Construction and operation of a WRL connection to the Sydenham Terminal Station, including the modification of a 500kV bay and a new 500kV bay extension with associated infrastructure.
- Upgrade works at the existing Bulgana Terminal Station.
- Upgrade works at Elaine Terminal Station.
- Upgrade works at Ballarat Terminal Station.

[1] The exact location of the new 500kV switchyard has not yet been determined but it is proposed to be near to and connected with the Bulgana Terminal Station via two 220kV connections. If the new 500kV switchyard and associated equipment is not located near the existing Bulgana Terminal Station (i.e., not within the same perimeter fencing), the site will be given a new terminal station name to avoid confusion between the sites during operation.

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

- The establishment of access tracks (both temporary and permanent) to facilitate the transport of plant and equipment to the tower assembly sites and other construction areas.
- The establishment of easements to be used for construction, occupation and operation of the new transmission line on freehold land. On Crown land, authority to access, construct and operate the transmission line will be determined on a parcel-by-parcel basis (where applicable). The proposed easement width for a 500kV transmission line is typically between 70 to 100m wide. It should be noted that this easement width is greater than what was proposed as part of the project for a 220kV transmission line (as referred in 2020).
- Potential safety modifications at existing transmission infrastructure, as required.

Key construction activities:

- The establishment of temporary laydown areas to be used during the construction period of the Project.
- The establishment of temporary project offices and workforce accommodation during the construction period of the Project.
- Installation of towers and overhead powerlines and other ancillary electricity infrastructure.
- The establishment of temporary tower assembly sites, at the base of all proposed tower sites.
- The excavation, ground improvements and foundations for the towers, within the tower assembly areas.
- The establishment of temporary stringing pads for the equipment associated with transmission line stringing works.
- The establishment of access roads and tracks (both temporary and permanent) to facilitate the transport of plant and equipment to the tower assembly sites and other temporary construction areas.
- The transportation and logistics associated with the delivery, unloading, storage and assembly of materials, plant and equipment.
- The removal, destruction and lopping of vegetation.
- The preparation of terminal station sites and construction and assembly of the terminal station components and associated infrastructure (including the potential excavation of borrow pits).
- Progressive rehabilitation along sections of the transmission line and at all temporary construction areas and laydown areas.
- Construction related activities to support the development of the Project, including but not limited to, site preparation activities, the upgrade of roads and bridges, concrete batching, blasting, temporary fencing and gate installation, equipment and plant delivery, traffic control, erosion control, waste disposal, spoil treatment, disposal and stormwater management and potential borrow pit excavations.

Key operational activities:

- Maintenance of the land and vegetation within the easement to ensure the safe and reliable operation of the transmission lines as is required under the *Electricity Safety Act 1998*.
- Maintenance of the land and vegetation within the terminal station sites to ensure the safe and reliable operation of the terminal stations.
- Inspections and maintenance of the transmission lines and terminal station(s) and easements at scheduled intervals.
- Responding to faults and complaints.
- Routine inspections of the terminal stations.

Key decommissioning activities (if applicable):

The transmission lines are designed for a service life of 80 years. The terminal stations are designed to have a minimum service life of 45 years.

Decommissioning the transmission lines and towers will include dismantling and removing the transmission lines and towers at the end of their service life.

The terminal stations will require upgrading or refurbishing to extend their service life and support the ongoing operation of the transmission lines connecting into them. Ultimately, the

decommissioning of the terminal stations owned by AusNet will involve the removal of all terminal station structures, equipment and associated infrastructure.

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

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

The NEM is both a wholesale electricity market and the physical transmission network. Victoria's generation, transmission and storage assets are part of and connected to the NEM, allowing the scheduling, sharing and most efficient and cost-effective use of electricity resources. This interconnection depends on strong and stable transmission connections between the declared transmission system in Victoria and the rest of the NEM, with sufficient redundancy and backups to deal with outages and extreme weather events.

The WRL is one project in the list of development opportunities outlined by AEMO's Integrated System Plan (**ISP**) for the optimal development path of the NEM. The ISP seeks to optimise the future generation and transmission development in the NEM to ensure the ongoing reliability and security of the power system, at the least cost and risk to consumers.

While Project is an augmentation of the network and part of a broader system plan for the NEM, it is a distinct Project, subject to a separate contract, independent funding and delivery timeframes. The Project will upgrade transmission capacity to Victoria's western and north-western zones, unlock renewable energy resources and reduce congestion. It is essential in providing additional capacity to the Western Victoria Renewable Energy Zone and will function independently of other upgrades, such as VNI West.

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

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

As described above in Section 3 (Background / Rationale), an earlier iteration of this project was the subject of the 2020 Referral and decision by the former Minister for Planning that an EES was required.

AusNet no longer intends to pursue the works as contemplated by the 2020 Referral, but instead intends to proceed with the proposed works as set out in this referral.

The proposed Project form no longer includes the construction of a new terminal station at Sydenham. A terminal station to replace and rebuild the existing Sydenham Terminal Station is a separate project, known as the Sydenham Terminal Station Rebuild.

The Project and the proposed VNI West transmission lines are proposed to connect to a new 500kV switchyard near to the existing Bulgana Terminal Station. The Minister for Energy and Resources and the Minister responsible for administering the *National Electricity (Victoria) Act 2005* (NEVA Act) issued a Ministerial order (No. S 60) under the NEVA Act, gazetted on Monday 20 February 2023 (February NEVA Order). The February NEVA Order conferred on AEMO the function to evaluate alternative options to connect VNI and the WRL.

AEMO evaluated a number of options and identified a preferred option for VNI West in a draft PACR provided to the Minister for Energy and Resources. In response, the Minister issued NEVA order (No. S 267), gazetted on Saturday 27 May 2023, describing the preferred option for VNI West as Option 5A, *"a route option from the WRL at Bulgana directly to a terminal station near (directly east of) Kerang"*. The order also explained *"Option 5A requires some changes to the WRL, including relocation of the Mount Prospect terminal station site to Bulgana and uprating the WRL from 220 kilovolts to 500 kilovolts from Mount Prospect to Bulgana"*. A key function of the terminal station at Mount Prospect was to switch the voltage from 220kV to 500kV however the specification for an uprate made this requirement redundant.

The Project will operate independently of VNI West and is not dependent on the completion of VNI West.

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

AEMO's November 2022 report, 'Western Renewables Link – Analysis for the purposes of clause 5.16.4(z3) of the National Electricity Rules', provides Total Expected Project Capital Cost of $737M for the Project.

AEMO's May 2023 'VNI West Project Assessment Conclusions Report Volume 1: Identifying the preferred option for VNI West', estimated the Project will increase in cost by $315M.

As a result, based on AEMO's calculations, the estimated capital expenditure of the Project is in excess of $1 billion. Further refinement of the estimated capital cost will be undertaken by AusNet as the Project develops.

4. Project alternatives

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

The Area of Interest is a broad geographic area that was defined to allow consideration of prudent and feasible route alternatives that could deliver AEMO's objectives of unlocking the western Victoria renewable energy sector, increasing electricity transmission capacity, and reducing congestion in the network.

A proposed route has been identified within the Area of Interest for further assessment and refinement. The proposed route was publicly announced by AusNet in November 2021 and an update was announced in August 2022. The proposed route has been developed based on a range of desktop studies, ground-truthing, landholder, community and stakeholder input, and constructability and technical considerations as part of development activities being undertaken as part of the EES required under the Minister for Planning's 2020 decision.

The design principles used for the selection of the proposed route include:

- Maximise distance to townships, houses and other sensitive facilities.
- Follow existing transmission line easements where practicable and where houses or other infrastructure have not been built up to the edge of the easement.
- Avoid registered Aboriginal cultural heritage sites and culturally significant places, where known and where practicable.
- Avoid registered historic heritage sites (Victorian Heritage Register and Victorian Heritage Inventory) where practicable.
- To the extent feasible, use natural terrain and existing vegetation to screen the transmission line from views from houses and public viewing areas.
- Avoid areas protected by significant landscape overlays, where practicable. Where not practicable, site the route to reduce impacts on the protected scenic values.
- Align route at the back/rear of properties to reduce impacts on land use, including agriculture and land access.
- Avoid severing or separating large areas of properties that could impact on the existing land use, including agriculture.
- Minimise impacts to existing aerodrome operations.
- Avoid windbreak plantings and shelter belts or use design to reduce impact where unavoidable.
- Avoid native vegetation where practicable.
- Minimise impacts on threatened and protected species habitat through route selection and where unavoidable, design including potential to overfly riparian corridors.
- Preferentially avoid highly erosive soils and areas subject to landslip.
- Avoid reservoirs and large waterbodies where overhead lines may limit recreation and management activities. Where unavoidable, site the route to minimise impacts on reservoir operation and recreational use.
- Avoid acute angles of more than 45 degrees and limit number of bends where practicable to reduce visual impact of larger structures.
- Consider transmission network diversity (geographic distribution of grid infrastructure) to minimise potential for single point of failure affecting large parts of or the whole network.

With all criteria, where avoidance is not possible, the Project seeks to minimise impacts as far as reasonably practicable.

Alternative overhead transmission line routes have been proposed by individuals, community groups, members of Parliament and other stakeholders in submissions. Consideration of the alternatives has been undertaken regarding the design principles above.

Design Alternatives

Alternative routes and designs were proposed in submissions on the draft scoping requirements for the EES required under the Minister for Planning's 2020 decision, and have been presented by interested stakeholders, organisations and the community through engagement with AusNet. The alternative routes, designs and construction methods identified have been considered and evaluated against key environmental, cultural and social criteria, and, the ability for the alternative to deliver the project in a timely and cost-efficient manner whilst also improving the capability of the transmission network. This assessment is relevant to the Project, as described in Section 3 (Project Description) of this referral.

The assessment of the major alternative routes proposed by communities and stakeholders are summarised below. It should be noted that many minor alternatives have also been suggested by stakeholders (including landholders) other than those described below, and AusNet has and will continue to modify the design in response to stakeholder feedback, where the modified design offers a net community benefit and does not increase impacts.

Alternative route	Within the AOI	Maintains network security, stability, and reliability	Environmental, social and cultural impacts compared to current proposed route	Overall assessment against the current proposed route
Lerderderg State Park	Yes	Yes	• Reduces visual impact at Darley • Increases biodiversity impacts • Increases land use impacts by traversing a public reserve (Lerderderg State Park, which is to be incorporated in the proposed Wombat–Lerderderg National Park)	Higher impact
Wombat State Forest	Partially outside the AOI	Yes	• Reduces agricultural impacts • Increases biodiversity impacts • No provision to grant easements or lease required for transmission infrastructure in Hancock Victoria Plantation (**HVP**) property, potentially requiring legislative changes • Increases land use impacts by traversing a state forest (Wombat State Forest which is to be partly incorporated into the proposed Wombat–Lerderderg National Park)	Higher impact
Southern corridor	Yes	No	• Avoids visual impact at Darley • Increases visual impact at Gordon and Caroline Springs • Increases transmission network congestion and security of supply	Reduces some impacts but does not maintain network security and reliability

			risk through consolidating four 500kV circuits in one corridor • Increases the number of dwellings close to the route • Increases historic heritage impacts	
Creswick Plantation	Yes	No Yes, if combined with proposed route	• Reduces visual and agriculture impacts • Increases historic heritage impacts • No provision to grant easements or lease required for transmission infrastructure in HVP property, potentially requiring legislative changes • Increases transmission network congestion and security of supply risk through consolidating four 500kV circuits in one corridor • Increases land use impacts by traversing a state forest (Glen Park State Forest) • Increases the number of dwellings close to the route	Higher impacts and does not maintain network security and reliability unless combined with proposed route
RIT-T Option B3	Partially outside the AOI	No	• Increases length of transmission line in critically endangered native grasslands between Balliang and Werribee River • Increases transmission network congestion and security of supply risk through consolidating four 500kV circuits in one corridor • Increases the number of dwellings close to the route	Reduces some impacts but does not maintain network security and reliability and is unlikely to be delivered in a timely cost-efficient manner
Mortlake–Moorabool	Outside the AOI	No	• Increases agriculture impacts • Potentially increases biodiversity and Aboriginal cultural heritage impacts • Increases transmission network congestion and security of supply risk through consolidating four 500kV circuits in one corridor • Increases the number of dwellings close to the route	Higher impacts and does not maintain network security and reliability and is unlikely to be delivered in a timely cost-efficient manner

AusNet has examined full undergrounding and partial undergrounding options. A project that involves full underground construction is not feasible.

A transmission line with a partial underground section can be designed to have less visual and landscape impact compared to an overhead transmission line, but ground disturbance and easement restrictions of underground construction impact on vegetation, biodiversity, Aboriginal cultural heritage, and agriculture and other land uses along the length of the transmission line. Due to the greater ground disturbance impacts of undergrounding, the time required to design, supply and install cables and the comparatively higher costs associated with construction, an overhead transmission line solution is preferred.

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

A proposed route has been identified within the Area of Interest for further assessment and refinement as part of an anticipated EES process resulting from this referral. AusNet will continue to make changes to the proposed route in response to environmental considerations, technical requirements, community and stakeholder feedback.

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:
Works that are not considered capable of having a significant effect on the environment and are therefore proposed for exclusion include:

- Works associated with investigating, testing and surveying land associated with designing the Project
- Service proving to identify existing third-party assets (i.e., utility infrastructure)
- Business as usual works at existing terminal stations

Some preparatory works, considered to have minor impacts that can be appropriately managed through standard management processes and a preparatory works plan subject to the Minister for Planning's consent are also proposed to be excluded, including:

- The establishment of environment and traffic controls and 'no-go' zones.
- Demolition to the minimum extent necessary to enable Preparatory Buildings and Works (this does not apply to demolition works that impact on land within the Heritage Overlay).

6. Project implementation

Implementing organisation (ultimately responsible for project, i.e., not contractor)**:**
AusNet
Implementation timeframe:
Construction anticipated to commence in 2025. Construction is expected to take approximately two to three years (pending final approvals and delivery adjustments).
Proposed staging (if applicable):
Not applicable.

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).

An Area of Interest has been identified for the Project, as described in Section 2 (Project Location) of this referral and shown in Attachment B. The proposed route will continue to be assessed and refined, considering landholder and community input and environmental and technical considerations, as part of the assessment and approvals processes for the Project. The Project site will ultimately encompass:

- A 500kV transmission line route that runs from Bulgana (north of Ararat) to Sydenham (in Melbourne's north-west)
- Land in the vicinity of terminal stations (existing and proposed new 500kV switchyard)
- Land required for access and ancillary construction activities.

The construction footprint will be greater than the operational footprint, to accommodate construction activities and access.

The description in this section relates to the Area of Interest, including the proposed route and terminal stations.

General description of preferred site, (including aspects such as topography/landform, soil types/degradation, drainage/ waterways, native/exotic vegetation cover, physical features, built

structures, road frontages; attach ground-level photographs of site, as well as A4/A3 aerial/satellite image(s) and/or map(s) of site & surrounds, showing project footprint):

The Area of Interest extends from Bulgana in Victoria's west to Sydenham in Melbourne's north-west.

Topography
The Area of Interest is located within an environment incorporating a range of topographical types including:

- Relatively flat plains
- Undulating plains
- Elevated ridgelines and mountains
- Volcanic cones
- Valleys and gorges, including Werribee Gorge and Lerderderg Gorge
- Granite outcrops.

Bioregions
Bioregions are a landscape-scale approach to classifying the environment using a range of attributes such as climate, geomorphology, geology, soils and vegetation. The Area of Interest is located across three Victorian bioregions (environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks):

- **Victorian Volcanic Plain** (generally east of Bacchus Marsh and north of Creswick)
  The Victorian Volcanic Plain, located in west Victoria, is dominated by Cainozoic volcanic deposits. These deposits formed an extensive flat to undulating basaltic plain with stony rises, old lava flows, numerous volcanic cones and old eruption points and is dotted with shallow lakes both salt and freshwater. Numerous volcanic cones dot the landscape with scoria cones being the most common although some basalt cones are present.

  The soils are variable ranging from red friable earths and acidic texture contrast soils (Ferrosols and Kurosols) on the higher fertile plain to scoraceous material and support Plains Grassy Woodland and Plains Grassland ecosystems.

  Calcareous sodic texture contrast soils grading to yellow acidic earths (Chromosols and Sodosols to Dermosols), on the intermediate plain, and grey cracking clays (Vertosols) on the low plains, support Stony Knoll Shrubland, Plains Grassy Woodland and Plains Grassy Wetland ecosystems.

  On the stony rises (volcanic outcropping), the stony earths (Dermosols and Tenosols) support Stony Rises Herb-rich Woodland, Basalt Shrubby Woodland and Herb-rich Foothill Forest ecosystems.

- **Central Victorian Uplands** (generally between Bacchus Marsh and Creswick)
  The Central Victorian Uplands, located in central Victoria, is dominated by Lower Palaeozoic deposits giving rise to dissected uplands at higher elevations, amongst granitic and sedimentary (with Tertiary colluvial aprons) terrain with metamorphic and old volcanic rocks which have formed steeply sloped peaks and ridges. The less fertile hills support Grassy Dry Forest and Heathy Dry Forest ecosystems. Herb-rich Foothill Forest and Shrubby Foothill Forest ecosystems dominate on the more fertile outwash slopes. The granitic and sedimentary (with Tertiary colluvial aprons) terrain is dominated by Grassy Woodlands much of which has been cleared. Lower lying valleys and plains are dominated by Valley Grassy Forest and Plains Grassy Woodland ecosystems.

- **Goldfields** (at the north-western end of the Area of Interest)
  Goldfields, located in central Victoria, is dominated by dissected uplands (predominantly a northerly aspect) of Lower Palaeozoic deposits. Metamorphic rocks have formed steeply sloped peaks and ridges. A variety of relatively poor soils are dominant with yellow, grey and brown texture contrast soils (Chromosols and Sodosols) and minor occurrences of friable earths (Dermosols and Ferrosols).

  Box Ironbark Forest, Heathy Dry Forest and Grassy Dry Forest ecosystems dominate the lower slopes or poorer soils. The granitic and sedimentary (with Tertiary colluvial aprons) terrain is dominated by Grassy Woodlands much of which has been cleared. Occasional

low-lying corridors of alluvial valleys between the uplands are dominated by Low Rises Grassy Woodland and Alluvial Terraces Herb-rich Woodland ecosystems.

Vegetation
Vegetation within the Area of Interest is varied and includes:

- Native forest and woodland
- Native grassland
- Pasture
- Agricultural crops
- Plantations
- Roadside vegetation (native and exotic)
- Windbreak/buffer planting within farm areas
- Garden planting around residences.

Catchments, Waterways and Lakes
The Area of Interest contains the catchments of the following major waterways:

- Maribyrnong River
- Werribee River
- Moorabool River
- Mount Emu Creek
- Loddon River
- Avoca River
- Wimmera River.

There are many surface waterways within the Area of Interest. These include Kororoit Creek, Dry Creek, Toolern Creek, Djerriwarrh Creek, Pyrites Creek, Lerderderg River, Korkuperrimul Creek, Werribee River, Parwan Creek, Moorabool River, Goodman Creek, Birch Creek, Coghills Creek, Doctors Creek, Burnbank Creek, Bet Bet Creek, Avoca River, Glenlogie Creek, Glenpatrick Creek, Glenlofty Creek and Wimmera River.

Lakes and reservoirs within the Area of Interest include the Merrimu Reservoir, Melton Reservoir, Pykes Creek Reservoir, Bostock Reservoir, Beale Reservoir, Gol Gol Reservoir, White Swan Reservoir, Moorabool Reservoir, Newlyn Reservoir and Hepburn Lagoon.

Site area (if known): …Not applicable…… (hectares)

Route length (for linear infrastructure) ……Approximately 190km, pending the outcome of further assessment and refinement of the proposed route.

Current land use and development:
Predominant Land Uses
Agriculture is the dominant land use across the majority of the Area of Interest and includes cropping, grazing, intensive animal husbandry, horticulture and high-quality food production. Substantial parts of the Area of Interest are in the Farming Zone where the retention of productive agricultural land is deemed important.

A number of areas of timber production are also located in the Area of Interest, providing timber for sustainable forestry from plantations. These areas also provide biodiversity and landscape conservation, protection of water catchments and opportunities for recreation.

The Area of Interest includes natural environment areas which provide varying degrees of ecological, environmental and recreational value to the community e.g., Lerderderg State Park, Werribee Gorge State Park, Long Forest Flora and Fauna Nature Reserve and Wombat State Forest. This includes natural systems with a diverse range of native vegetation and animal habitat and significant landscapes that provide scenic qualities. These natural features and areas for recreation are important for tourism throughout the region.

Urban Areas and Rural Living
Dwellings are distributed across the Area of Interest with higher density clusters in greater numbers in Ballarat, Hepburn, Moorabool and Melton. Ballarat is a key regional centre within the Area of Interest, with close links to Creswick. The peri-urban towns of Bacchus Marsh and Ballan,

and metropolitan Melton within the Urban Growth Boundary, are key growth areas and provide housing options with proximity to Melbourne. Land within the Urban Growth Boundary and to the south of Bacchus Marsh and around Melton is to be developed under Precinct Structure Plans which cover large areas identified for future community, commercial and residential land use. Some dwellings on the periphery of Bacchus Marsh are located in the Rural Living Zone and some dwellings located in Melton are in the Green Wedge Zone.

Multiple other smaller townships predominantly made up of residential development and many areas of rural living are located throughout the Area of Interest.

Major Roads and Railways
Freeways and State Highways within the Area of Interest include the Western Freeway, Calder Freeway, Melton Highway, Midland Highway, Sunraysia Highway and Pyrenees Highway.

The Melbourne – Bendigo, Melbourne – Ballarat and Ballarat – Maryborough railway lines also pass through the Area of Interest.

Airports
There are three airports identified within 10km of the Area of Interest as part of public data information - Melbourne Airport, Bacchus Marsh Airfield and a small privately-owned aerodrome in Melton.

Existing Transmission Lines
The existing 220kV Horsham to Ballarat transmission line and the 220 kV Ballarat to Bendigo transmission line fall within the Area of Interest.

In the easternmost part of the Area of Interest the WRL will connect into the Sydenham Terminal Station proposed to be constructed as part of the Sydenham Terminal Station Rebuild. The existing Sydenham Terminal Station currently facilitates 500kV transmission line connections to the Moorabool Terminal Station, Keilor Terminal Station and the South Morang Terminal Station.

Existing Terminal Stations and Substations
A number of terminal stations and utility scale substations exist in or within 10km of the Area of Interest, including Sydenham, Waubra, Ballarat, Elaine, Bulgana and Crowlands terminal stations.

Description of local setting (eg. adjoining land uses, road access, infrastructure, proximity to residences & urban centres):
Described under 'Current Land Use and Development' above.

Planning context (eg. strategic planning, zoning & overlays, management plans):
The Project traverses through the municipalities of Northern Grampians, Pyrenees, Hepburn, Ballarat, Moorabool and Melton. This is shown on the plans in Attachment D.

Shire of Northern Grampians
A small section at the westernmost point of the Area of Interest near Bulgana intersects the Northern Grampians Local Government Area (**LGA**) within the Wimmera Southern Mallee region. Agriculture is the primary land use in this LGA, with land used for grazing and crop production including soft wood plantations. The Wimmera River Reserve and Six Mile Creek Reserve are recognised as important for water catchment and environmental purposes. Northern Grampians Shire Council identified the Wimmera River and its frontage as being vital in regard to water quality and platypus habitat. The Wimmera Southern Mallee regional growth plan supports opportunities for renewable energy generation and expansion of energy supply infrastructure, where feasible. Wind farms in the area include Bulgana Wind Farm and Ararat Wind Farm.

Zones	Overlays
Farming Zone Public Conservation and Resource Zone Road Zone Rural Conservation Zone	Bushfire Management Overlay Floodway Overlay Land Subject to Inundation Overlay

Shire of Pyrenees
The Area of Interest runs through the Pyrenees LGA from west of Glenlofty to Waubra. The Shire Council identifies that the area is renowned for wool production, that grape growing and wine production is a key asset in the LGA and identified horse breeding as an agricultural industry within the area. Commercial forestry including large-scale plantations occur in the LGA including south of Lexton and north of Waubra.

Ben More Bushland Reserve is covered by a Rural Conservation Zone and the Lexton Bushland Reserve contains native vegetation. Land east of Lexton is almost entirely within a Water Supply Protection Area supporting a number of water reservoirs for the local towns and agricultural areas and the area is protected by Environmental Significance Overlays. These areas are a primary source of domestic water supply for townships and surrounding farms.

Wind farms in this area include Waubra Wind Farm, Crowlands Wind Farm and Stockyard Hill Wind Farm. The Carisbrook to Horsham gas pipeline crosses the Area of Interest near Amphitheatre. The Pyrenees, Sunraysia and Midland Highways are identified as significant roads providing access to other parts of the region and state in the Central Highlands Regional Growth Plan. The Mildura Railway line is a key east-west transport asset for the Central Highlands, providing links across the region to major centres.

Zones	Overlays
Farming Zone Low Density Residential Zone Public Conservation and Resource Zone Public Park and Recreation Zone Public Use Zone Road Zone Rural Conservation Zone Rural Living Zone Township Zone	Bushfire Management Overlay Design and Development Overlay Environmental Audit Overlay Environmental Significance Overlay Heritage Overlay Restructure Overlay Vegetation Protection Overlay

City of Ballarat
The Area of Interest runs across the north of the City of Ballarat LGA. Ballarat is the largest town in the area and influences development and growth in its hinterland. The region is experiencing population growth in an environment with significant landscapes, agricultural, waterway and other environmental assets.

Potato growing plays an important economic role in the region. McCains is identified as a significant food producer that sources produce from within the region and has been identified as a large financial contributor to the agricultural industry and region. Broadacre grazing supports the wool, sheep and beef industry. The thoroughbred and harness racing industry also provides employment.

The Western Highway is a key east-west transport asset, the Midland Highway runs north-south connecting Ballarat to the towns of Creswick, Springmount, Newlyn and Blampied, and the Sunraysia Highway runs from Learmonth to Lexton. Gong Gong Reservoir and White Swan Reservoir are covered by Environmental Significance Overlays for the protection of water catchment areas.

Zones	Overlays
Farming Zone Neighbourhood Residential Zone Public Conservation and Resource Zone Public Use Zone Road Zone Rural Living Zone Special Use Zone	Bushfire Management Overlay Design and Development Overlay Environmental Significance Overlay Floodway Overlay Heritage Overlay Land Subject to Inundation Overlay Public Acquisition Overlay Significant Landscape Overlay Specific Controls Overlay

Shire of Hepburn

The Area of Interest runs across the south of the Hepburn LGA. Hepburn Shire Council identified the agricultural land within the Area of Interest as some of the most significant in the shire due to the volcanic soil, especially for broadacre farming and potato growing. Potato growing is a key agriculture industry in the LGA.

Creswick provides retail services and access to services such as medical centres, hospitals and education facilities and important community and recreational facilities. Local heritage and environmental features in the Hepburn LGA provide benefits through tourism and intrinsic local value. Creswick Regional Park, Hepburn Lagoon and Newlyn Reservoir are covered by a Rural Conservation Zone and have significant ecological, heritage, landscape, recreational and tourism values. Heritage buildings and features north of Creswick and around Newlyn have been identified, including those related to the historic goldfields. The Goldfields Track and the Mount Prospect Cemetery in Newlyn North were identified by the Shire Council as important community facilities.

Areas of Significant Landscape Overlay have been applied to maintain the visual significance of woodlands and grasslands, peaks and hilltops, and of ridges and escarpments, to protect these areas from intrusive development. Mount Beckworth Scenic Reserve and Bullarook Creek Streamside Reserve include areas of native vegetation. The Mount Beckworth Scenic Reserve is subject to a Heritage Overlay. The Clunes Plantation and DEECA Plantation are located in the Mount Beckworth Scenic Reserve.

Hepburn Lagoon is a key water storage for the Loddon Basin, managed by Goulburn-Murray Rural Water Corporation. The Newlyn Reservoir is subject to an Environmental Significance Overlay for catchment protection.

Zones	Overlays
Commercial Zone	Bushfire Management Overlay
Farming Zone	Development Plan Overlay
General Residential Zone	Environmental Significance Overlay
Industrial Zone	Erosion Management Overlay
Low Density Residential Zone	Heritage Overlay
Public Conservation and Resource Zone	Land Subject to Inundation Overlay
Public Park and Recreation Zone	Significant Landscape Overlay
Public Use Zone	Vegetation Protection Overlay
Road Zone	
Rural Conservation Zone	
Rural Living Zone	
Special Use Zone	
Township Zone	

Shire of Moorabool

The towns of Bacchus Marsh, Darley and Ballan have been identified as key commercial and residential growth areas. Development of Bacchus Marsh is constrained, particularly to the east where the Bacchus Marsh Irrigation District is located. The Bacchus Marsh Irrigation District is identified as a significant farming area and is subject to major flood inundation from the Lerderderg River. The Maddingley Waste and Resource Recovery Hub to the south-east and sand and gravel quarries to the north-east around Darley and Coimadai also restrict further development at Bacchus Marsh.

There are a number of Precinct Structure Plans within the Shire of Moorabool which aim to address the housing and employment demands from population growth, and direct planning zone and overlay changes.

Moorabool Council consider the scenic rural environment to be integral to the municipality. The proposed Wombat-Lerderderg National Park is located in the north of the Area of Interest in the Public Conservation and Resource Zone and Crown land managed by Parks Victoria. Significant Landscape Overlays exist to protect the natural scenic qualities in the area, including views and vistas around Bacchus Marsh from the visual impact of development and the scenic hilltops and ridgelines to the west of Darley and significant views and vistas to these natural features.

An active recreation precinct for residents and visitors is currently being developed at Bald Hills. There has been a long-term focus on creating biolinks throughout the upper Werribee Catchment since 2004. Land is also subject to proclaimed water catchment areas and supports reservoirs such as Merrimu Reservoir, Pykes Creek Reservoir, Moorabool Reservoir, Wilson Reservoir and Dean Reservoir. These areas are also protected by Environmental Significance Overlays.

Planning for an eastern bypass road link around Bacchus Marsh is being undertaken and is expected to impact this area. The Moorabool Wind Farm is located in the Moorabool LGA.

Zones	Overlays
Commercial Zone	Bushfire Management Overlay
Farming Zone	Development Contributions Plan Overlay
General Residential Zone	Development Plan Overlay
Green Wedge Zone	Environmental Audit Overlay
Industrial Zone	Environmental Significance Overlay
Low Density Residential Zone	Heritage Overlay
Mixed Use Zone	Infrastructure Contributions Overlay
Neighbourhood Residential Zone	Incorporated Plan Overlay
Public Conservation and Resource Zone	Land Subject to Inundation Overlay
Public Park and Recreation Zone	Melbourne Airport Environs Overlay
Public Use Zone	Restructure Overlay
Residential Growth Zone	Significant Landscape Overlay
Road Zone	Specific Controls Overlay
Rural Conservation Zone	
Special Use Zone	
Urban Floodway Zone	
Urban Growth Zone	

City of Melton

The City of Melton is within the Melbourne metropolitan area with most of its land within the Urban Growth Boundary in the western region of Melbourne. The West Growth Corridor Plan identifies the western area of Metropolitan Melbourne as one of the fastest growing regions in the state. There are several Precinct Structure Plans in the City of Melton identifying the need for future localised development including infrastructure, green space, and support services. MacPherson Park is an important community facility in Melton, servicing community sporting clubs and groups from the local and broader region. A new school is proposed at Coburns Road, Toolern Vale (Melton Christian College).

The Green Wedge Zone provides for a peri-urban environment that supports the transition of land use between the urban growth zone of metropolitan Melbourne and agricultural land in the west and protects the development of the extractives industry close to Melbourne. Melton City Council identified the equine industry, including horse breeding, as being of importance to the area. There are areas of Significant Landscape Overlay related to volcanic hills including Mt Kororoit north of Melton. Melton City Council identified Mt Kororoit as a key visual feature. Development of the Outer Metropolitan Ring Road (**OMR/E6**) Transport Corridor is expected to impact this area and the Toolern Vale Solar Farm is planned for north-east of Melton.

Zones	Overlays
Commercial Zone	Bushfire Management Overlay
Farming Zone	Development Contributions Plan Overlay
General Residential Zone	Development Plan Overlay
Green Wedge Zone	Environmental Audit Overlay
Industrial Zone	Environmental Significance Overlay
Low Density Residential Zone	Heritage Overlay
Mixed Use Zone	Infrastructure Contributions Overlay
Neighbourhood Residential Zone	Incorporated Plan Overlay
Public Conservation and Resource Zone	Land Subject to Inundation Overlay
Public Park and Recreation Zone	Melbourne Airport Environs Overlay
Public Use Zone	Public Acquisition Overlay
Residential Growth Zone	Restructure Overlay
Road Zone	Significant Landscape Overlay
Rural Conservation Zone	

Special Use Zone Urban Floodway Zone Urban Growth Zone	

State Planning Policy Framework:
The Project supports the philosophy of Clause 11 – Settlement by responding to the needs of existing and future communities through provision of required infrastructure. The Project is responding to the needs of the community for diversity of choice and provision of efficiency in relation to energy supply.

The Project supports State planning policy in relation to energy supply, in particular the support for transmission infrastructure for the growing production of renewable energy. The benefits of this Project will be felt state-wide and will support other key policy associated with the built environment and the state economy. Objectives in relation to the protection of natural environments and resources, landscapes and amenity will continue to be recognised as part of the planning approvals process and the final design of the Project to minimise and mitigate/manage potential impact.

Local Planning Policy Framework:
The Municipal Planning Strategy (in the case of Northern Grampians, Pyrenees and Hepburn Planning Schemes) and the Local Planning Policy Framework, including the Municipal Strategic Statement (for the Ballarat, Moorabool and Melton Planning Schemes), each contain a broad planning framework directed to supporting a high standard of urban design and amenity; protecting environmental and landscape values; protecting biodiversity; managing environmental risks and amenity; protecting places of heritage significance; strengthening the economy; and managing and improving open space. The Project supports and implements the intent of those policies.

Local government area(s):
As discussed above in 'Planning Context' the Project traverses through the municipalities of Northern Grampians, Pyrenees, Hepburn, Ballarat, Moorabool and Melton.

The Area of Interest is also within 10km of the following local government areas:

- Ararat
- Macedon Ranges
- Hume
- Brimbank
- Wyndham.

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)**:**
Overview

As set out above, the Project is proposed within a broader Area of Interest. The description in this section relates to the Area of Interest.

The Area of Interest contains or is located within 10km of many significant environmental assets. Of particular significance are the large areas of public land reserved for nature conservation, recreation and/or tourism including:

- Organ Pipes National Park
- Long Forest Nature Conservation Reserve
- Lerderderg State Park (which is to be incorporated into the proposed Wombat–Lerderderg National Park)
- Wombat State Forest (which is to be partly incorporated into the proposed Wombat–Lerderderg National Park)
- Werribee Gorge State Park
- Creswick Regional Park
- Ben Major State Forest
- Mount Cole State Forest

- Pyrenees Range State Forest
- Lexton Nature Conservation Reserve.

In addition to the areas of public land reserved for nature conservation purposes, the Area of Interest contains or is located within 10km of many landscapes where the Significant Landscape Overlay (**SLO**) has been applied:

Melton

- Significant Landscape Overlay Schedule 1 – Volcanic Hills and Cones (**SLO1**) on Mount Cottrell, Mount Kororoit and Mount Atkinson

Moorabool

- Significant Landscape Overlay Schedule 1 – Scenic Ridgetops and Ridge Line Areas (**SLO1**) on scenic hilltops and ridge lines encircling the township of Bacchus Marsh
- Significant Landscape Overlay Schedule 2 – Gordon Town Centre, Township and Surrounds (**SLO2**)

Hepburn

- Significant Landscape Overlay Schedule 1 – Volcanic Peaks Landscape Area, Ridges and Escarpments and Sites of Geological Significance (**SLO1**) on volcanic cones in the Newlyn locality

Ballarat

- Significant Landscape Overlay Schedule 1 – Mount Bolton (**SLO1**)

Ecology

Plans which show the biodiversity values which apply to the Area of Interest are contained in Attachment E.

Areas that have highest potential for ecological values such as threatened communities and habitat for threatened species are those areas with large intact areas of native vegetation that can support a range of threatened species or native grassland areas which are classified as endangered and may support a range of threatened species. This includes:

- Areas of native forest and woodland in the vicinity of Lexton. Areas of forest in this area that may support threatened species such as Ben Major Grevillea (listed under the EPBC and FFG Acts).
- Areas of forest close to Creswick that have potential to support a range of threatened species.
- Patches of woodland between Amphitheatre and Bulgana that have potential to support threatened woodland communities and a range of threatened species. Native grasslands that have potential to comprise threatened communities (listed under the EPBC and FFG Acts) and habitat for a range of threatened species such as Spiny Rice-flower, Golden Sun Moth and Striped Legless Lizard (all listed under the EPBC and FFG Acts).
- Areas in the vicinity of Bacchus Marsh have vegetation that can comprise threatened communities and species such as Brittle Greenhood and Bacchus Marsh Wattle (listed under the FFG Acts) that are regionally restricted to this area. There is also potential for these areas to support migrating Swift Parrot (listed under the EPBC and FFG Acts).
- Areas of forest adjacent to the Lerderderg State Park which has potential to support high quality native vegetation that can support threatened species such as the Swift Parrot (listed under the EPBC and FFG Acts).
- Areas of forest near Moorabool Reservoir which has potential to support high quality native vegetation that can support threatened species such as Basalt Peppercress (listed under the EPBC and FFG Acts).

Cultural Heritage

The Area of Interest contains hundreds of areas of cultural heritage significance associated with Aboriginal places, named waterways and volcanic cones.

Hundreds of previously registered Aboriginal places, including artefact scatters, low density artefact distributions, scar trees, earth features, quarries and object collections are located

throughout the Area of Interest. These places are located across the landscape but can be found in greater densities along waterways, ridgelines or on top of stony rises or elevated land.

Previously registered Aboriginal places are particularly prevalent near to waterways such as the Maribyrnong River, Kororoit Creek, Werribee River and Moorabool River and where large areas of remnant vegetation exists in reserves such as Organ Pipes National Park, Long Forest Nature Conservation Reserve and Lerderderg State Park. Distinct volcanic features in the landscape such as Mt Cottrell, Mt Kororoit and Mt Atkinson volcanic cones are also areas of Aboriginal cultural heritage sensitivity for both tangible and intangible values.

Within the Area of Interest, the following Registered Aboriginal Parties and Traditional Owner Groups are recognised: Barengi Gadjin Land Council Aboriginal Corporation, Eastern Maar Aboriginal Corporation, Dja Dja Wurrung Clans Aboriginal Corporation, Wadawurrung Traditional Owners Aboriginal Corporation and Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation.

Historic Heritage

The Area of Interest contains places on the Victorian Heritage Register, Victorian Heritage Inventory and Heritage Overlays within the relevant Planning Schemes. These include, but are not limited to, homesteads, dry stone walls, mining sites, township buildings, churches, railway bridges and embankments, war memorials and Avenues of Honour.

No places within the Commonwealth Heritage List, National Heritage List or Register of the National Estate were recorded within the Area of Interest. The closest Commonwealth heritage places are located approximately 8km south-east of the nearest point of the Area of Interest are the Officer's Mess, Eastern Hangars and West Workshops Precincts at RAAF Williams Laverton Base.

The closest National heritage place to the Area of Interest is the Eureka Stockade Gardens, located approximately 3.5km south-west of the closest part of the Area of Interest.

In addition to the above, a submission is currently being prepared by a consortium of Councils in Central Victoria to formulate a serial nomination of a collection of places related to the Victorian Goldfields for inscription in the UNESCO World Heritage List. The bid is currently being prepared with stakeholder engagement underway.

Waterways, Wetlands and Water bodies

The Area of Interest traverses the catchments of the Maribyrnong River, Moorabool River, Loddon River, Mount Emu Creek, Avoca River, Wimmera River Kororoit Creek, Werribee River and Moorabool River as well as many smaller watercourses.

The Area of Interest also contains or is in close proximity (<100m) to mapped wetland areas including Lake Merrimu, Melton Reservoir, Pykes Creek Reservoir, Bostock Reservoir, Gong Gong Reservoir, White Swan Reservoir, Newlyn Reservoir as well as many unnamed wetlands.

9. Land availability and control

As set out above, the Project is proposed within a broader Area of Interest. The description in this section relates to the Area of Interest.

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

☐ No ☒ Yes If yes, please provide details.

A plan showing public and private land within the Area of Interest is contained in Attachment F.

Current land tenure (provide plan, if practicable):

Mixture of predominately freehold land and some public land. A plan showing public and private land within the Area of Interest is contained in Attachment F.

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

On freehold land, the establishment of easements will be used for construction, occupation and operation of the new transmission line. On Crown land, an agreement to access, construct and operate the transmission line will be determined on a parcel-by-parcel basis (where applicable).

AusNet will seek to negotiate an option for easement with landholders once the project site is defined. Where an easement cannot be negotiated with landholders directly, AusNet may seek approval from the Governor in Council to compulsorily acquire an easement over private land to erect, lay and maintain powerlines, in accordance with the *Electricity Industry Act 2000.*

For the construction of a new 500kV switchyard and associated equipment near to the existing Bulgana Terminal Station, AusNet will seek to purchase the required land.

Temporary construction facilities, such as laydown facilities or workforce accommodation, will be leased for the duration of the construction phase. The land will be remediated and returned upon completion of the Project construction phase.

Other interests in affected land (eg. easements, native title claims):
The Area of Interest traverses land (namely Crown land) over which native title may exist, within Wotjobaluk, Eastern Maar, Dja Dja Wurrung, Wadawurrung and Wurundjeri Country.

Native title matters associated with the Project will be governed by the *Native Title Act 1993* and, with respect to any part of the Project which is subject to the Dja Dja Wurrung Recognition and Settlement Agreement, under the *Traditional Owner Settlement Act 2010*.

AusNet will comply with the requirements of the legislation and manage any risks to native title posed by the Project through engagement with traditional owners and other relevant stakeholders (including government).

10. Required approvals

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

- The project contemplated by the 2020 Referral was determined to be a 'controlled action' requiring assessment and approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**). AusNet is seeking to vary the proposal under s156A of the EPBC Act, to reflect the changes to the project outlined in this referral.

State

- Planning approval under the *Planning and Environment Act 1987* for use and development of the land for a utility installation and ancillary works via a Planning Scheme Amendment to the Northern Grampians, Pyrenees, Hepburn, Ballarat, Moorabool and Melton Planning Schemes
- Cultural Heritage Management Plans under the *Aboriginal Heritage Act 2006*
- Permit to remove protected flora on public land under the *Flora and Fauna Guarantee Act 1988*
- Permit and/or consent under the *Heritage Act 2017* for impact on any sites on the Victorian Heritage Register and/or the Victorian Heritage Inventory and to impact on archaeological relics (non-Aboriginal archaeological relics more than 50 years old)
- Consent under the *Road Management Act 2004* from the coordinating road authority for works on, in or under a road reserve
- License under the *Water Act 1989* to consult, alter, operate or decommission works on, over or under a waterway, to construct a bore or to extract groundwater
- Authorisation to relocate wildlife under the *Wildlife Act 1975*
- Potential authorisation for borrow pits including a work authority or Work Plan under the *Mineral Resources (Sustainable Development) Act 1990.*

The *Electricity Industry Act 2000* regulates the Victorian electricity supply industry. In accordance with this Act, AusNet holds a licence to transmit and supply electricity from the Essential Services Commission of Victoria.

Have any applications for approval been lodged?

☒ No ☒ Yes If yes, please provide details.

No applications for approvals have been lodged to date.

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

- Commonwealth Department of Climate Change, Energy, Environment and Water (**DCCEEW**), on the request to vary a proposal to take action under s156A of the EPBC Act.

During the preparation of the EES required under the Minister for Planning's 2020 decision the following agencies were consulted:

- Department of Transport and Planning (**DTP**) - Impact Assessment Unit
- Department of Energy, Environment and Climate Action (**DEECA**) – Grampians Region
- DTP – Planning
- First Peoples – State Relations
- DTP – Transport
- Heritage Victoria
- Relevant Registered Aboriginal Parties
- Relevant Local Councils
- Relevant Catchment Management Authorities
- Parks Victoria
- Environment Protection Authority
- Energy Safe Victoria (**ESV**).

Following the submission of this referral, AusNet plans to engage the above agencies on the status of the Project and EES.

Note: While ESV are not a statutory decision-making authority, ESV authorise AusNet's Emergency Safety Management System (**ESMS**).

Other agencies consulted:

During the preparation of the EES required under the Minister for Planning's 2020 decision, the following agencies were consulted:

- Agriculture Victoria
- Country Fire Authority (**CFA**)
- Central Highlands Water
- DEECA – Energy
- Invest Victoria
- Regional Development Victoria
- Victorian Planning Authority
- Melbourne Water
- Southern Rural Water

Following the submission of this referral, AusNet plans to engage the above agencies on the status of the Project and EES.

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):

As set out above, the Project is proposed within a broader Area of Interest. The description in this section relates to the Area of Interest.

The Area of Interest has largely been historically disturbed from its pre-European state for agricultural land uses and few contiguous areas of habitat remain. While the Project will employ practicable measures to avoid potential impacts, the following potential impacts are anticipated:

Construction

- The Project will result in the clearing of more than 10ha of native vegetation, including anticipated impacts on vegetation of an Ecological Vegetation Class (EVC) identified as endangered and likely to be of conservation significance. While the avoidance and minimisation of impacts to biodiversity values will be central to the design process, it is anticipated direct impacts to native vegetation and habitat will occur through clearance activities associated with the development of the transmission line, associated easement and other Project components.
- Habitat loss – Due to the foreseen clearance requirements, the Project may result in small scale habitat loss relative to the alignment length. Where impacts cannot be avoided, habitat loss may occur on the edges of existing habitat areas, trimming the larger extent of habitat available in that area. Habitat loss may also occur on the edges of existing breaks, such as roads or other powerline easements, increasing the width of clearing between habitat areas.
- Habitat fragmentation – The Project will seek to avoid fragmentation of large contiguous areas of native vegetation and habitat including habitat links between the Area of Interest and the Lerderderg State Park-Pyrete Range, the Parwan Creek and Brisbane Ranges National Park, vegetated habitat corridors between Gordon and the Moorabool Reservoir, and riparian habitat corridors associated with Creswick Creek, Mount Greencock Creek and Greenhill Creek. However, there may be some impacts to linking areas, as the Project seeks to avoid large contiguous areas of native vegetation.
- The Project will have impacts on landscape values of regional importance due to the length and height of the overhead transmission line. Whilst the preferred transmission line route will endeavour to avoid land reserved under the *National Parks Act 1975* and land affected by a Significant Landscape Overlay in Planning Schemes, it will be visible from such landscapes and some landscapes protected by a Significant Landscape Overlay.
- The Project will impact on Aboriginal cultural heritage as the Area of Interest contains specific landforms and landscape features that are sensitive for Aboriginal cultural heritage and hold Aboriginal cultural values. These include major rivers and their tributaries, wetlands and volcanic cones. While these features will be avoided through route selection, there will likely be impact on Aboriginal cultural heritage.
- By construction of an easement and transmission line though property with existing land uses such as agriculture and forestry, the Project will disrupt existing land uses.

Operation

- The Project will impact the amenity of a substantial number of residents, due to the extent of visibility of the transmission line within the landscapes viewed from dwellings.
- Due to the presence and maintenance of the easement, there may be indirect impacts through the partial removal of native vegetation and habitat within some parts of the transmission line easement and other issues such as the fragmentation of habitat and potential weed invasion.
- Potential for some birds and bats species to collide with the transmission conductors (wires).

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.

As set out above, the Project is proposed within a broader Area of Interest. The description in this section relates to the Area of Interest.

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

The Area of Interest is largely cleared of native vegetation, with native vegetation mostly occurring in small and fragmented patches of bush. Some more connected, linear patches of native vegetation occur along waterways and within road corridors, while conservation reserves and areas of steeper terrain support larger contiguous areas of native vegetation. Numerous large, scattered trees including River Red Gums with occasional Yellow Gum, Red Box, and Longleaf Box are retained in grazing paddocks and along waterways and roadsides which provide important nesting hollows to a variety of birds and animals.

Existing conditions assessments within the Project Area of Interest have been completed by independent technical specialists. As part of the biodiversity impact assessment being prepared for the EES required under the Minister for Planning's 2020 decision, targeted flora and fauna surveys across parts of the Area of Interest were completed. Desktop resources, such as the Commonwealth Protected Matters Search Tool, Victorian Biodiversity Atlas, Modelled Ecological Vegetation Classes Mapping and aerial imagery were reviewed, the likelihood of occurrence assessed, and vegetation and habitat assessments completed.

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

☒ NYD Estimated area ……(hectares)

The extent of native vegetation that may need to be cleared for construction is still to be determined. There is capacity for the Project to avoid many areas of contiguous native vegetation but some impact to native vegetation patches and scattered trees is expected.

While the avoidance and minimisation of impacts to biodiversity values will be central to the design process, it is anticipated direct impacts to native vegetation and habitat will occur through clearance activities associated with the development of the transmission line, associated easement and other Project components.

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.

Across the Area of Interest, 69 ecological vegetation classes (EVCs) are present across four bioregions.

A summary of EVCs modelled to occur in the Area of Interest along with their bioregional conservation significance is provided below. As noted above, the Area of Interest is substantially greater than the ultimate project site and therefore the extent of EVCs that may be affected will be substantially less.

EVC #	Ecological Vegetation Class (EVC)	Total Extent (AOI) (ha)	Bioregional Conservation Significance (BCS)
67	Alluvial Terraces Herb-rich Woodland	274	Central Victorian Uplands (CVU) - Endangered
			Goldfields (Gold) - Endangered
152	Alluvial Terraces Herb-rich Woodland/Plains Grassy Woodland Complex	312	CVU - Endangered
			Gold - Endangered
653	Aquatic Herbland/Plains Sedgy Wetland Mosaic	81	CVU - Endangered

61	Box Ironbark Forest	1,214	CVU - Depleted
			Gold – Depleted
			Victorian Volcanic Plain (VVP) - Depleted
68	Creekline Grassy Woodland	491	CVU - Endangered
			Gold - Endangered
			VVP - Endangered
			Wimmera (Wim) - Endangered
164	Creekline Herb-rich Woodland	473	CVU - Vulnerable
			Gold - Endangered
			VVP - Endangered
3	Damp Sands Herb-rich Woodland	46	CVU - Endangered
895	Escarpment Shrubland	489	CVU - Endangered
			VVP - Endangered
56	Floodplain Riparian Woodland	89	VVP - Endangered
22	Grassy Dry Forest	6,728	CVU - Vulnerable
			Gold - Depleted
			VVP - Depleted
896	Grassy Dry Forest/Heathy Dry Forest Complex	1,238	Gold - Vulnerable
128	Grassy Forest	23	CVU - Vulnerable
175	Grassy Woodland	3,585	CVU - Endangered
			Gold - Vulnerable
			VVP - Endangered
76	Grassy Woodland/Alluvial Terraces Herb-rich Woodland Mosaic	1,177	Gold - Endangered
320	Grassy Woodland/Heathy Dry Forest Complex	144	Gold - Depleted
20	Heathy Dry Forest	3,026	CVU - Depleted
			Gold - Least Concern
48	Heathy Woodland	102	Gold - Depleted
23	Herb-rich Foothill Forest	5,116	CVU - Vulnerable
			Gold - Depleted
			VVP - Depleted
178	Herb-rich Foothill Forest/Shrubby Foothill Forest Complex	324	CVU - Vulnerable
70	Hillcrest Herb-rich Woodland	334	CVU - Vulnerable
			Gold - Depleted
71	Hills Herb-rich Woodland	1,383	VVP - Vulnerable
104	Lignum Swamp	60	VVP - Endangered

132	Plains Grassland	5,819	CVU - Endangered
			VVP - Endangered
125	Plains Grassy Wetland	139	VVP - Endangered
55	Plains Grassy Woodland	6,976	CVU - Endangered
			VVP - Endangered
647	Plains Sedgy Wetland	175	VVP - Endangered
803	Plains Woodland	130	Gold - Endangered
			Wim - Endangered
963	Plains Woodland/Plains Grassland Mosaic	1,019	CVU - Endangered
			VVP - Endangered
292	Red Gum Swamp	175	CVU - Endangered
			VVP - Endangered
18	Riparian Forest	11	CVU - Vulnerable
803	Riparian Woodland	270	CVU - Endangered
			Gold - Endangered
			VVP - Endangered
			Wim - Vulnerable
64	Rocky Chenopod Woodland	963	CVU - Vulnerable
			VVP - Vulnerable
894	Scoria Cone Woodland	42	VVP - Endangered
198	Sedgy Riparian Woodland	58	CVU - Depleted
			VVP - Depleted
21	Shrubby Dry Forest	1,338	CVU - Depleted
			VVP - Least Concern
851	Stream Bank Shrubland	620	CVU - Vulnerable
			VVP - Endangered
53	Swamp Scrub	169	CVU - Endangered
			VVP - Endangered
83	Swampy Riparian Woodland	77	CVU - Endangered
47	Valley Grassy Forest	1,284	CVU - Vulnerable
			Gold - Vulnerable
			VVP - Vulnerable
	Total Area	45,971	

The most widespread EVCs (not necessarily having the largest area but most likely to be encountered outside of conservation reserves) in the Area of Interest are:

- Plains Grassland (EVC 132) in the VVP bioregion east of Bacchus Marsh and around Lexton-Waubra
- Plains Grassy Woodland (EVC 55) in the VVP bioregion south east of Bacchus Marsh
- Grassy Woodland (EVC 175) in the CVU bioregion east of Ballan
- Herb-rich Foothill Forest (EVC 23) in the CVU bioregion between Ballan and Creswick

- Hills Herb-rich Woodland EVC 71) in areas of the CVU bioregion associated with Mount Bolton and Mount Beckworth
- Grassy Dry Forest (EVC 22) and Alluvial Terraces Herb-rich Woodland/Plains Grassy Woodland Complex (EVC 152) in the CVU bioregion around Elmhurst (i.e., Nowhere Creek/Glenpatrick Creek valley)
- Grassy Dry Forest (EVC 22) and Grassy Woodland (EVC 175) and related complexes in the Goldfields bioregion
- Riparian Woodland (EVC 641) and Plains Woodland (EVC 803) in the Wimmera bioregion.

Have potential vegetation offsets been identified as yet?

☒ NYD ☐ Yes If yes, please briefly describe.

Other information/comments? (eg. accuracy of information)
Further work through desktop and field assessments is required to assess the existing conditions and develop the project in response.

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)
See the description under Native Vegetation above. A biodiversity impact assessment was under preparation as part of the EES required under the Minister for Planning's 2020 decision. The findings of this assessment will need to be applied in the context of the Project, as detailed in Section 3 (Project Description) of this referral.

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.

Threatened Ecological Communities
Several of the EVCs modelled to occur in the Area of Interest have equivalence with Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), and *Flora and Fauna Guarantee Act 1988* (FFG Act) listed threatened ecological communities.

EPBC Act listed TEC	Bioregion	EVC Equivalents potentially occurring within AOI
Grassy Eucalypt Woodland of the Victorian Volcanic Plain – Critically Endangered	Victorian Volcanic Plain	EVC 55 Plains Grassy Woodland EVC 175 Grassy Woodland
Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia – Endangered	Victorian Volcanic Plain	EVC 803 Plains Woodland
	Central Victorian Uplands	EVC 64 Rocky Chenopod Woodland – CVU EVC 235 Plains Woodland/Herb-rich Gilgai Wetland Mosaic EVC 803 Plains Woodland
	Goldfields	EVC 55 Plains Grassy Woodland EVC 67 Alluvial Terraces Herb-rich Woodland EVC 175 Grassy Woodland EVC 235 Plains Woodland/Herb-rich Gilgai Wetland Mosaic EVC 803 Plains Woodland
Natural Temperate Grassland of the Victorian Volcanic Plain – Critically Endangered	Victorian Volcanic Plain	EVC 132 Plains Grassland
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains – Critically Endangered	Victorian Volcanic Plain	EVC 125 Plains Grassy Wetland

White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland – Critically Endangered	Central Victorian Uplands	EVC 47 Valley Grassy Forest EVC 175 Grassy Woodland
	Goldfields	EVC 47 Valley Grassy Forest EVC 55 Plains Grassy Woodland EVC 67 Alluvial Terraces Herb-rich Woodland EVC 175 Grassy Woodland

FFG Act listed threatened community	**Bioregion**	**EVC Equivalents potentially occurring within AOI**
Creekline Grassy Woodland (Goldfields) Community	Goldfields	EVC 18 Riparian Forest EVC 68 Creekline Grassy Woodland
Grey Box – Buloke Grassy Woodland Community	Wimmera	EVC 66 Low Rises Woodland
Rocky Chenopod Open-scrub community	Central Victorian Uplands	EVC 64 Rocky Chenopod Woodland EVC 175 Grassy Woodland
Western Basalt Plains (River Red Gum) Grassy Woodland	Victorian Volcanic Plain	EVC 55 Plains Grassy Woodland EVC 175 Grassy Woodland EVC 803 Plains Woodland
Western (Basalt) Plains Grasslands Community	Victorian Volcanic Plain	EVC 132 Plains Grassland

The Endangered and Vulnerable EVCs within the Area of Interest mainly comprise grassland and woodland communities, typically associated with the same plains and gentle slopes favoured for agricultural production and therefore extensively cleared. Forest communities, which are typically associated with steeper slopes and gullies, and higher elevations, have been less extensively cleared for agricultural production and mostly have a bioregional conservation significance of Depleted or Least Concern.

Threatened Flora
A total of 91 threatened flora species have previously been identified within the Area of Interest. Following the ground-truthing and vegetation and habitat assessments within the Area of Interest, 64 threatened flora species were identified as having a moderate to high likelihood of occurring.

Several of the threatened flora species are herbs and forbs specifically associated with the grasslands of the volcanic plain and have a limited distribution remaining due to post colonisation agricultural practices where grazing, lack of ecological burning and application of fertilisers have resulted in their decline. Many of these species are now largely confined to areas of remnant roadside native vegetation or reserves that have not been impacted by agriculture. Other species have a naturally limited distribution due to their endemism, where any habitat loss or modification can significantly impact their distribution.

Targeted surveys have been undertaken on the species with potential to be impacted by various corridor and route options.

Threatened Fauna
Following the ground-truthing and vegetation and habitat assessments, 64 threatened fauna species were identified as having a high likelihood of occurring or are known to occur within the Area of Interest.

Previous records of threatened fauna show a large proportion of threatened species are associated with wetlands. Several cryptic grassland species are represented in the threatened species list, as are forest dwelling mammals, usually associated with the conservation areas in and around the Area of Interest.

Targeted surveys have been undertaken on the species with potential to be impacted by various corridor and route options, as part of assessment completed for the EES required under the Minister for Planning's 2020 decision.

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.

Threatening processes considered possible and will need to be managed for the Project are:

- Loss of hollow-bearing trees from Victorian native forests
- Habitat loss and fragmentation for fauna in Victoria
- Invasion of native vegetation by Blackberry (*Rubus fruticosus L. agg*) and other 'environmental weeds'
- Loss of coarse woody debris from Victorian native forests and woodlands
- Clearance of vegetation and other construction activities resulting in the removal of EPBC Act and FFG Act listed threatened ecological communities, contributing to a loss of intact examples of communities that have become limited in extent and quality in the wider landscape.
- Clearance of vegetation and other construction activities resulting in the removal of EPBC Act and FFG Act listed threatened flora species, contributing to a significant reduction in population size.
- Clearance of vegetation and other construction activities resulting in the removal of habitat for EPBC Act and FFG Act listed threatened fauna species, which may lower population numbers, increasing the risk of local extinction.
- Clearance of vegetation and other construction activities resulting in the loss of native vegetation including large and scattered trees from the landscape. This reduces the capacity of an area to support indigenous flora and fauna and to allow for the movement of more mobile species between areas of important habitat (e.g., remnant native vegetation).
- Clearance of vegetation and other construction activities resulting in the loss of habitat for native flora and fauna species not specifically listed for protection under the EPBC Act or FFG Act.
- Construction of infrastructure resulting in habitat fragmentation in areas of contiguous habitat, leaving gaps that hinder natural dispersal and biodiversity across the landscape.
- Clearance of vegetation and the construction of infrastructure resulting in newly cleared areas providing vantage points that have the potential to increase predation on native fauna.
- Construction of works, including vegetation removal, within the bed and banks of waterways reducing the quality and extent of aquatic habitat contributing to a decline in populations of native aquatic flora and fauna species.

Several issues and risks relating to biodiversity are apparent for the Project. The Project aims to reduce issues and risks to biodiversity as much as feasibly possibly. Project design will apply the avoidance and minimisation principles of biodiversity management.

The Project will include key management criteria in the Construction Environment Management Plan (**CEMP**) to manage key threatening processes (EPBC) and listed potentially threatening processes (FFG) which have been defined by relevant scientific committees as activities that have a disproportionally high impact to biodiversity and need to be managed to reduce environmental impacts associated with major developments.

These threatening processes will be considered in the design and management of the construction requirements of the Project, through a CEMP, and then the ongoing operation through relevant management agreements with DEECA and landholders.

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.

Threatened species and communities that have potential to occur within the Area of Interest are listed above.

The extent of impacts to these species or communities will be assessed through further impact assessment.

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

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

Transmission towers, access tracks and terminal stations will be sited to avoid impacts to native vegetation and habitat, where possible. Where avoidance is not possible, attempts will be made to minimise and mitigate impacts. Any unavoidable native vegetation removal will be offset in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation* (December 2017) or another agreed arrangement.

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

13. Water environments

As set out above, the Project is proposed within a broader Area of Interest. The description in this section relates to the Area of Interest including the proposed route.

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

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

The Project will not require significant volumes of fresh water for either its construction or operation.

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

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

The Project will not discharge wastewater or runoff to water environments. The transmission lines and terminal station works will be constructed and operated in accordance with the relevant erosion and sediment controls to manage any discharges or runoff.

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.

The Area of Interest traverses eight major water courses, which from west to east are:

- Wimmera-Avon River
- Avoca River
- Loddon River
- Hopkins River (small area along the southern boundary)
- Barwon River (small area along the southern boundary)
- Moorabool River
- Werribee River
- Maribyrnong River

There are many other smaller waterways and catchments within the Area of Interest. Major watercourses are associated with areas susceptible to flooding (peak flood level with a 1% annual exceedance probability or 1-in-100-year probability) across the Area of Interest.

It is not foreseen that the Project's construction and operation activities are likely to result in adverse effects on surface water quality or environs.

The Area of Interest includes 568 current wetlands mapped by the Department of Energy, Environment and Climate Action:

- 74 permanent and 65 temporary freshwater lakes.
- 18 permanent and 47 temporary freshwater swamps.

- Two permanent and 79 temporary freshwater marshes and meadows.
- 283 unknown wetland types (generally farm dams and water impoundments).

It is not expected that the Project will impact on the values of wetlands other than for those where the footprint of the towers is within the mapped wetland area. Where this occurs, the construction footprint is assumed to comprise native vegetation regardless of on-ground conditions.

There are no Ramsar wetlands within or adjacent to the Area of Interest. Areas of the Lerderderg River within the Area of Interest are listed in the Directory of Important Wetlands in Australia (**DIWA**). Other DIWA listed wetlands in the vicinity of the Area of Interest include Lake Wendouree in central Ballarat and Merin Merin Swamp located 7km north of Clunes.

No impact to water quality or flows to Ramsar wetlands is likely to occur given transmission line towers can be located away from tributaries leading to the wetland, and standard environmental management measures will be implemented to minimise the risk and potential impact of erosion, sedimentation or fuel spills.

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

☐ NYD ☐ No ☒ Yes If yes, specify which water environments.

Waterways and wetlands across the landscape provide important habitat for wetland and migratory birds as well as amphibians and fish. The Lerderderg River is listed in the Directory of Important Wetlands in Australia (DIWA 2021). The Area of Interest includes 568 DEECA mapped current wetlands, with the highest density between Ballan and Creswick, and around Ballarat. The largest wetlands are associated with water supply reservoirs. Hepburn Lagoon is also of importance as a volcanic caldera (crater lake).

In the western part of the AOI, wetlands provide important refuges and foraging resources for a variety of waterbirds, including wetland migratory birds that seasonally move across the landscape. The low-lying areas of the volcanic plain, between Lexton and Creswick in particular, contain many seasonal wetlands supporting habitat for a variety of waterbirds including ibis, herons, swamphens, and ducks.

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.

No wetlands listed under the Ramsar Convention are located within or adjoining the Area of Interest. The nearest Ramsar wetlands are associated with the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site located about 15km south of the Area of Interest at its eastern extent.

A section of the Lerderderg River within the Area of Interest is listed in the DIWA. The DIWA listing applies to the section of the river located in the Lerderderg State Park within the Area of Interest. The Lerderderg River DIWA wetlands are comprised of permanent rivers and streams and riverine floodplains.

The Project is not foreseen to impact on wetlands listed under the Ramsar Convention or the Lerderderg DIWA.

Could the project affect streamflows?

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

Towers will be sited to span over any waterways and floodplains. The terminal stations will also be sited to avoid areas affected by streamflow where possible. The location of the new 500kV switchyard near to the existing Bulgana Terminal Station is yet to be determined. There is a potential for streamflows to be affected, pending the ultimate location.

Could regional groundwater resources be affected by the project?

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

Regional groundwater resources will not be affected by the Project. Where groundwater is encountered by the Project, standard controls and management measures will be implemented.

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)

It is not foreseen that the Project will affect environmental values (beneficial uses) with the implementation of standard controls and specific measures required by the Project's proposed construction and environmental management measures. Waterways will be avoided where possible.

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

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

It is not foreseen that the Project will affect aquatic, estuarine or marine ecosystems. While the Area of Interest does include water dependent ecosystems, it is expected that through siting of the Project and the implementation of standard controls that impacts can be avoided or appropriately managed.

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.

See above, no foreseen effects.

Is mitigation of potential effects on water environments proposed?

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

Investigations are currently underway as to determine if there will be effects on water environments and any mitigation measures that may be required.

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

14. Landscape and soils

As set out above, the Project is proposed within a broader Area of Interest. The description in this section relates to the Area of Interest.

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.

As described in 'Planning Context' the Area of Interest is subject to many Environmental and Significant Landscape Overlays, including the Environmental Significance Overlay (**ESO**), Significant Landscape Overlay (**SLO**) and Vegetation Protection Overlay (**VPO**).

Melton

- Environmental Significance Overlay Schedule 2 – Wetlands, Waterways and Riparian Strips
- Environmental Significance Overlay Schedule 4 – Grasslands within the Werribee Plains Hinterland
- Environmental Significance Overlay Schedule 5 – Rural Conservation Area
- Environmental Significance Overlay Schedule 6 – Rural Conservation Area
- Significant Landscape Overlay Schedule 1 – Volcanic Hills and Cones

Moorabool

- Environmental Significance Overlay Schedule 1 – Proclaimed Water Catchment Areas
- Environmental Significance Overlay Schedule 2 – Waterway Protection
- Environmental Significance Overlay Schedule 3 – Long Forest and Werribee Gorge
- Environmental Significance Overlay Schedule 4 – Wetland Areas
- Environmental Significance Overlay Schedule 5 – Ballan Sewage Treatment Plant Buffer Area
- Environmental Significance Overlay Schedule 7 – Grasslands within the Werribee Plains Hinterland

- Environmental Significance Overlay Schedule 8 – River Red Gums in Bacchus Marsh Valley
- Significant Landscape Overlay Schedule 1 – Scenic Ridgetops and Ridge Line Areas
- Significant Landscape Overlay Schedule 2 – Gordon Town Centre, Township and Surrounds

Hepburn

- Environmental Significance Overlay Schedule 1 – Proclaimed Catchment Protection
- Significant Landscape Overlay Schedule 1 – Volcanic Peaks Landscape Area, Ridges and Escarpments and Sites of Geological Significance
- Vegetation Protection Overlay Schedule 1 – Remnant Vegetation
- Vegetation Protection Overlay Schedule 2 – Significant Exotic and Native Vegetation
-

Ballarat

- Environmental Significance Overlay Schedule 1 – Invermay Land Protection Area
- Environmental Significance Overlay Schedule 3 – Water Catchment Areas
- Environmental Significance Overlay Schedule 5 – Koala and Koala Habitat Protection
- Significant Landscape Overlay Schedule 1 – Mount Bolton
- Vegetation Protection Overlay Schedule 1 – Native Vegetation Protection Areas

Pyrenees

- Environmental Significance Overlay Schedule 1 – Designated Water Supply Areas
- Environmental Significance Overlay Schedule 2 - Watercourse Protection
- Vegetation Protection Overlay Schedule 1 – Roadside Grassland Protection and Conservation

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

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

The *South West Victorian Landscape Assessment Study* (**SWVLAS**) was prepared by Planisphere in 2012 and seeks to better understand the significance of the visual and landscape character across southwest Victoria. The study does not form part of the planning policy framework however is a useful guide for its description of, local landscape values and their contribution to the economic social and environmental significance of the region. In addition, the outcomes of the study informed a number of Regional Growth Plans prepared in the region. It also provides recommendations and planning scheme-ready policy for retaining and respecting landscape values.

The landscapes in the regions are diverse and include volcanic plains and cones that dominate much of the area, to the Great Dividing Range in the north and the Grampians in the central west. Within the SWVLAS, certain significant landscapes or significant views across landscapes are identified, several of these have been identified as within the Area of Interest.

The following landscapes have been identified by the SWVLAS as being of either State or regional significance and are within or immediately adjacent to the Area of Interest for the Project:

Western Volcanic Plain: 1.10 - Hepburn Gold Mines & Volcanic District (State Significance)
The Hepburn Gold Mines and Volcanic District features a dense cluster of rounded volcanic rises scattered across the rolling landscape.

Interspersed between the rises are numerous steep sided mullock heaps, leftovers from the era of deep lead gold mining. These mounds tower out of the paddocks and remain largely intact despite being exposed to weathering for over a century. In addition, the ruins of the mine buildings are highly evocative of the gold mining heritage that shaped this region and had a wide-ranging impact upon Victoria's early development.

The Uplands: 2.1 - Lerderderg Gorge and State Park (State Significance)
A landscape of forested hills through which the Lerderderg River has cut through sandstone and slate to create a deep gorge with walls rising to 400m and exposed rocky cliffs. This gorge stretches south to the flat volcanic plains near Bacchus Marsh. The Lerderderg River weaves through this landscape past rocky boulders and sandy beaches.

Within the park the folding, hilly topography surrounding the Lerderderg Gorge is blanketed in thick vegetation with some exposed rocky outcrops. The landscape is wild and rugged, most of it accessible only by foot.

The Uplands: 2.3 – Werribee Gorge (State Significance)
The formation of the Werribee Gorge slices through the surrounding cleared plateau to the west of Bacchus Marsh. The gorge retains a rugged aesthetic of exposed craggy rock faces, native bushland, the Werribee River and steep sided valley walls.

Edges of this landscape are defined by topography and vegetation. Cleared plains give way suddenly to steep vegetated valley walls and exposed rock faces. Colours and textures deepen and become more exaggerated towards the base of the gorge.

The Uplands: 2.4 – Bacchus Marsh Agricultural Valley (Regional Significance)
This landscape comprises the lush and colourful market gardens on the valley floors near Bacchus Marsh, in parts that are edged by steep valley walls of the surrounding gorges.

Views of it are filtered through the impressive Avenue of Honour that forms the main entrance to Bacchus Marsh from the Western Freeway and along the Werribee Vale Road.

The Uplands: 2.12 Island Uplands (Regional Significance)
The Island Uplands rise as three individual landforms (Mount Beckworth, Mount Bolton and Mount Ercildoune) from the northern edges of the Western Volcanic Plain. Their prominence is visible from long distances away. The Waubra Wind Farm is sited to the east of the rises and the tops of turbines are a visible feature in many parts of this landscape.

The granitic outcrops and tors on the slopes of the Island Uplands are an outstanding feature that provides additional visual interest. Edges of pine plantation also provide a contrast, though this has resulted in ugly scarring on the landscape where they have been felled in a number of places.

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

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

The Area of Interest is partly within or adjoining the following land reserved under the *National Parks Act 1975*:

- Partly within and adjoining the Lerderderg State Park (which is to be incorporated into the proposed Wombat–Lerderderg National Park)
- Adjoining the Werribee Gorge State Park
- Adjoining the Brisbane Ranges National Park

Long Forest and Werribee Gorge are recognised for the scenic value of the vegetation within the reserve. Werribee Gorge State Park and Mount Blackwood (near the Lerderderg State Park) have been identified as having formal lookout locations that take in views across the study area.

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

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

The Area of Interest contains or is adjacent to many areas of public land used for conservation or recreation purposes including but not limited to:

- MacPherson Park and Melton Equestrian Park
- Long Forest Nature Conservation Reserve
- Merrimu Reservoir Picnic Area
- Lerderderg State Park
- Historic Djerriwarrh Bridge Picnic Area
- Melton Reservoir
- Robert Vance Moon Reserve
- Bacchus Marsh Golf Club
- Werribee Gorge State Park
- Brisbane Ranges State Park
- Pykes Creek Reservoir
- White Elephant Reserve, Glenmore
- Yaloak Polo Club

- Bostock Reservoir Picnic Ground
- Ballan Racecourse Reserve
- Glen Park State Forest
- Creswick Regional Park
- Newlyn Recreation Reserve
- Mount Beckworth Scenic Reserve
- Ben More Bushland Reserve
- Amphitheatre Bushland Reserve
- Joel Nature Conservation Reserve

These areas are shown in Attachment C.

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

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

Due to the prominence of overhead transmission lines in the landscape there are likely to be effects on landscape values. No alterations of landforms are proposed to be associated with the Project, however there will be some clearing of vegetation required for the transmission lines which could affect landscape values.

Is there a potential for effects on landscape values of regional or State importance?

☐ NYD ☐ No ☒ Yes Please briefly explain response.

There is potential for effects on those landscape values of regional or State importance described above because of the scale of Project elements, including the height of the transmission lines and the consequent extensive viewshed.

Is mitigation of potential landscape effects proposed?

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

It is recognised that large towers can be unavoidably visible and will often contrast with the environments in which they are situated. The Project will seek to avoid impacts through appropriate siting of the Project infrastructure where possible. Mitigation options available to manage visual impact from locations that are considered to be significantly visually affected by a Project include:

- Screen planting around terminal stations, buildings and Project infrastructure
- Re-siting to locations where the Project elements will have less visual impact
- Coating treatments of structures.

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

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

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

Soils

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

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

The construction of tower foundations and access roads could potentially impact on land stability, acid sulphate soils or highly erodible soils. However, the intention is to site Project infrastructure in locations which would not impact on susceptible areas.

The western section of the Area of Interest has poorly developed rocky or riverine-type soils with a low potential for erosion. The eastern half of this section toward Ballarat has well-draining acidic soils. Small areas of land in the precinct are covered by an Erosion Management Overlay in the

Hepburn and Ballarat planning schemes. There is low probability of acid sulfate soils, which contain iron sulfide minerals that cause damage to the environment when disturbed, for most of this section of the Area of Interest, except around established waterbodies e.g., reservoirs, lakes and wetlands and waterway areas.

The eastern section of the Area of Interest has sodic soils susceptible to waterlogging and erosion. Small areas are covered by an Erosion Management Overlay. There is low probability of acid sulfate soils for the majority of this section of the Area of Interest, except around established waterbodies e.g., reservoirs, lakes and wetlands and waterway areas. Up to 50% of the eastern section of the AOI is covered by salinity provinces with saline discharges most likely to occur in low-lying drainage basins and basaltic plains.

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

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

Two sites of regional geological significance (Geology Survey Australia) have been identified in the western section of the Area of Interest:

- Kangaroo Hills: prominent landforms relating to unusual style of historical eruption.
- Mount Direction Roof Pendant: exposed granite near the top of the intrusion shows mode of intrusion, and relationships with host rocks.

Thirty sites of geological significance (Geology Survey Australia) have been identified in the eastern section of the Area of Interest including:

- Korkuperrimul Creek (national significance): Permian glacigene sediments, tillites, fluvioglacial sandstones and conglomerate. Faulted against Ordovician bed-rock.
- Bald Hill (international significance): Complex small folds and faults, Gangamopteris in sandstone, marine Notoconularia, leaf remains (fossils).
- Lerderderg River Morven (international significance): Exposure of continuous 145m section of Permian glacial deposits including tillite, glacial outwash, ice rafts.

It is not foreseen that the Project will significantly affect geologically significant features.

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

15. Social environments

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

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

The Project will generate traffic during construction, however the impacts from construction traffic generated from the Project is expected to be relatively minor due to the size of the Project proposed route and the wide distribution of traffic.

During the operational phase of the Project the expected number of trips is significantly lower than during construction. Maintenance staff can be expected to attend terminal stations and transmission tower sites every other month. As a result, the operational phase of the Project is expected to have little to no impact on the transport network.

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.

As described in 'Overview of potentially significant environmental effects' the Project has potential for significant effects on the amenity due to changes in views from dwellings.

No significant effects are expected as a result of dust, noise or traffic conditions with the implementation of standard controls and project specific management measures.

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. During construction there is a potential for adverse effects on the amenity of nearby residents due to the emission of noise during construction. However, standard controls and management practices are expected to mitigate the effects to an acceptable level.
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. There may be potential for severance of access to some residences for short periods (hours rather than days) during construction.
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 site of the new 500kV switchyard near to the existing Bulgana Terminal Station is yet to be determined. However, it is expected that there would be displacement of non-residential land use, probably agriculture. Construction of the Project may lead to loss of access to land along and adjacent to the proposed route, untimely scheduling that interferes with optimal timing for stock breeding, crop sowing or harvest, or land clearance that reduces pasture for stock grazing or reduces crop area and yield. It is expected that disturbance will be short term and appropriate compensation and management measures can be employed to minimise impacts. During operations the Project infrastructure will not change the broader use of the land, as most existing land uses can continue or continue with some modifications within the easement. There are some restrictions on the use of the land within an easement for overhead transmission lines.
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. Temporary use of land to support construction activities (such as the easement, temporary laydown areas, tower work sites, stringing pads and access tracks) may cause adverse effects on local residents and businesses. During operations the Project infrastructure will not change the broader use of the land, as most existing land uses can continue or continue with some modifications within the easement.
Is mitigation of potential social effects proposed? ☐ NYD ☐ No ☒ Yes If yes, please briefly describe. Recommended measures for managing the potential land use, social and economic effects of the Project are being developed by technical specialists, for inclusion in the Project Environmental Management Framework.
Other information/comments? (eg. accuracy of information)

Cultural heritage

Have relevant Indigenous organisations been consulted on the occurrence of Aboriginal cultural heritage within the project area? ☐ No If no, list any organisations that it is proposed to consult. ☒ Yes If yes, list the organisations so far consulted. The relevant Registered Aboriginal Parties and Traditional Owner Groups listed below and First Peoples – State Relations have been engaged through the development of the EES required under the Minister for Planning's 2020 decision. Following the submission of this referral, AusNet will continue to engage cultural heritage consultants to complete a series of Cultural Heritage Management Plans (**CHMPs**). The Area of Interest was split into six geographic areas to align with the boundaries of the relevant Registered Aboriginal Parties: • Area 1: Barengi Gadjin Land Council Aboriginal Corporation (BGLCAC) • Area 2: Eastern Maar Aboriginal Corporation (EMAC) • Area 3: Non-Registered Aboriginal Party area (represented by Traditional Owners BGLCAC, DJAARA and EMAC)

- Area 4: Dja Dja Wurrung Clans Aboriginal Corporation (DJAARA)
- Area 5: Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC)
- Area 6: Wurundjeri Woi-Wurrung Cultural Heritage Aboriginal Corporation (WWCHAC).

CHMPs are being prepared for each of these areas, noting that two CHMPs will cover the single DJAARA area.

AusNet also consulted with the Boon Wurrung Foundation, Bunurong Land Council Aboriginal Corporation, Martang Pty Ltd and Wathaurong Aboriginal Corporation through the development of the EES required under the Minister for Planning's 2020 decision.

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)
Seven Aboriginal Cultural Heritage Management Plans (CHMPs) are being prepared for the EES required under the Minister for Planning's 2020 decision:

- CHMP 17311 (DJAARA)
- CHMP 17312 (Non-RAP consulting with BGLCAC, DJAARA, and EMAC)
- CHMP 17313 (BGLCAC)
- CHMP 17321 (EMAC)
- CHMP 18101 (DJAARA)
- CHMP 18108 (WTOAC)
- CHMP 18111 (WWCHAC).

It is foreseen that the preparation of the above CHMPs will continue for the Project in Section 3 (Project Description) of this referral. These CHMPs are the primary mechanism for managing the Project's impacts on Aboriginal cultural heritage. The CHMPs are being prepared with input and advice from Registered Aboriginal Parties, Traditional Owner groups and First Peoples – State Relations.
Preparation of the CHMPs has included standard and complex assessments:

- Field surveys (part of the standard assessment) examined the condition of previously registered Aboriginal Places and parts of the study area for evidence of Aboriginal cultural heritage. The latter involved examining surface exposures for Aboriginal cultural material, inspecting mature native trees for evidence of Aboriginal cultural modification and examining caves and rock shelters for evidence of Aboriginal occupation.
- Archaeological test excavations (part of the complex assessment) investigated the stratigraphy of subsurface deposits and soil types at high-risk locations within the study area. They also investigated the potential for Aboriginal cultural heritage to be present in surface contexts that could be impacted by the Project.

These surveys and excavations have identified Aboriginal cultural heritage that has not yet been registered on the Victorian Aboriginal Heritage Register (VAHR).

As the CHMPs progress, further Aboriginal Places/Values may be identified. These will be subject to impact assessment as part of each CHMP. When finalised, the CHMPs will identify the potential impacts of the Project on Aboriginal cultural heritage places and outline site-specific measures that will be taken to manage and protect this heritage.
The Project is required to follow the management conditions contained in the CHMPs, with compliance overseen by the Registered Aboriginal Parties and First Peoples – State Relations.

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

The Area of Interest contains hundreds of areas of cultural heritage significance, associated with Aboriginal places, named waterways and volcanic cones.

Hundreds of previously registered Aboriginal places, including artefact scatters, low density artefact distributions, scar trees, earth features, quarries, and object collections are located throughout the Area of Interest. These places are located across the landscape but can be found in greater densities along waterways, ridgelines or on top of stony rises or elevated land. Previously registered Aboriginal places are particularly prevalent near to waterways such as the

Maribyrnong River, Kororoit Creek, Werribee River and Moorabool River and where large remnant vegetation exists in reserves such as Organ Pipes National Park, Long Forest Nature Conservation Reserve and Lerderderg State Park. Distinct volcanic features in the landscape such as Mount Cottrell, Mount Kororoit and Mount Atkinson volcanic cones are known areas of Aboriginal cultural heritage sensitivity for both tangible and intangible values.

Through the preparation of the seven CHMPs and Cultural Values Assessments (CVAs) for the Project the Project's impacts on known (previously registered) Aboriginal Places and broader intangible Aboriginal Values and Aboriginal Places that have not yet been registered are being examined. Places are being identified from several sources, including the Victorian Aboriginal Heritage Register (VAHR), prior archaeological assessments, reviews of ethnohistorical and historical information, and consultation with Registered Aboriginal Parties and Traditional Owner groups.

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.

As noted earlier, the Area of Interest contains places on the Victorian Heritage Register, Victorian Heritage Inventory and Heritage Overlays within the relevant Planning Schemes. These include, but are not limited to, homesteads, dry stone walls, mining sites, township buildings, churches, railway bridges and embankments, war memorials and Avenues of Honour.

No places within the Commonwealth Heritage List, National Heritage List or Register of the National Estate were recorded within the Area of Interest. The closest Commonwealth heritage places are located approximately 8km south east of the nearest point of the Area of Interest are the Officer's Mess, Eastern Hangars and West Workshops Precincts at RAAF Williams Laverton Base.

It is foreseen that there will be an impact on places listed under the *Heritage Act 2017,* although through siting the Project will seek to avoid these places.

Is mitigation of potential cultural heritage effects proposed?

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

While effort will be made to avoid places listed on the *Heritage Act 2017*, there may be impacts on heritage places. These impacts will be appropriately managed through specific controls in the Environmental Management Framework.

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

16. Energy, wastes & greenhouse gas emissions

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

☒ Electricity network. If possible, estimate power requirement/output …….
The new 500kV switchyard near to the existing Bulgana Terminal Station will consume electricity, to be calculated once further design has been completed.

☒ 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.

☒ Excavated material. Describe briefly.

☒ Other. Describe briefly.

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

Construction waste will mainly comprise cut-off pieces of wires, small amounts of concrete waste, packing material, cardboard, plastic and timber. Inert wastes (non-toxic wastes such as cardboard, glass bottles and timber) will be recycled where practicable.

Waste generated by the Project that cannot be recycled or reused on-site will be removed from all construction work areas and disposed off-site at an approved facility. Waste disposal methods would be selected based on the classification of waste material in the *EPA Victoria Publication 1827: Waste classification assessment protocol and EPA Publication 1828*: *Waste disposal categories – characteristics and thresholds*. All wastes generated during construction of the Project would be transported, managed and disposed of in accordance with the relevant EPA Victoria requirements.

Wastewater will include sewage from the construction workforce and run-off from construction sites. Subject to the construction contractor's requirements, portable toilets will be provided at the temporary laydown areas, tower assembly sites and stringing pads, where required for use by the construction workforce. Temporary sewage collection and storage facilities will be installed where required for these toilets and the proposed construction accommodation facilities and pumped out for off-site disposal at an appropriate facility to avoid risks to surface water, groundwater and land uses. All portable toilets will be removed when works are completed.

Construction activities could require the use of fuel, oil, grease, degreasers, solvents, paints, disinfectants and detergents. The Project's construction contractor will implement a Surface Water Management Plan that includes industry standard controls, best practice construction techniques and other mitigation measures to minimise the risk of harm from pollution associated with the Project's construction activities. The plan will provide specific controls to meet EPA Victoria requirements covering leaks and spills, and the management of stormwater and contaminated surface water run-off.

Material excavated during construction will be reused on-site or locally, such as for site rehabilitation and landscaping or for use by the landholder. Further geotechnical investigations and soil testing is to be conducted prior to construction commencing to confirm sub-surface conditions and soil characteristics. These investigations will determine the suitability of excavated material for reuse. Where the soil is unsuitable for these purposes and another beneficial reuse cannot be identified, the construction contractor will be required to manage this material to meet the general environmental duty and in accordance with EPA Victoria requirements and permits and the Project's Spoil Management Plan. This includes classifying waste soil and testing for contamination prior to removal from the site and transportation to an authorised waste receiving facility.

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

- ☒ 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.

Greenhouse gas emissions will be produced from various sources during the project's construction, including the consumption of fuel in vehicles and construction plant and equipment, fuel used in the haulage of materials, waste and soil, and the loss of carbon sink through vegetation clearance. The greatest source of emissions will be embedded emissions: the CO2e* emissions associated with the production of materials used in the Project's construction, such as steel, concrete, aluminium and optic fibre.

17. Other environmental issues

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

☐ No ☒ Yes If yes, briefly describe.

Other environmental issues/impacts associated with the Project include electromagnetic interference and radiation (**EMI/EMF**), bushfire risks, agricultural impacts and aviation. Detailed assessment, including relevant field surveys and investigations have been undertaken to gather more information and inform impact assessments. The findings of these studies will inform route selection processes and design refinement.

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

Where there is potential for adverse environmental effects, site and route selection will be used as the key avoidance measure. Specific mitigation measures will be developed by specialists for specific matters adversely effected as the project is developed and routes refined.

☒ Design: Please describe briefly

AusNet is undertaking extensive work to determine suitable design and construction methods that avoid impacts to high sensitivity areas and minimise potential environmental impacts.

☒ Environmental management: Please describe briefly.

The Project approval requirements will include the preparation of an Environmental Management Framework that seeks to appropriately manage potential environmental effects.

☐ 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 Project is assessing projects that could contribute to cumulative impacts on environmental, social and cultural values and then assessing their spatial and temporal relationships to determine if the cumulative impacts are possible and significant.

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.

Detailed assessments were completed for the EES required under the Minister for Planning's 2020 decision. This included detailed desktop assessment, field surveys, targeted surveys, investigation and impact assessment. This work can be relied upon and used as the basis for further work to be undertaken for the current Project form as described in Section 3 (Project Description) of this referral.

A revised study program will need to be developed for the Project, based on the potential environment effects outlined in this referral. It is foreseen that the potential effects are such that an EES will be required for the Project.

Has a program for future environmental studies been developed?

☐ No ☒ Yes If yes, briefly describe.

It is proposed the following technical disciplines will assess the impacts of the Project:

Technical Assessments	
Biodiversity	Bushfire
Aboriginal Cultural Heritage	EMI and EMF
Historic Heritage	Greenhouse Gas
Landscape and Visual	Climate Change
Land Use and Planning	Noise and Vibration
Social	Transport
Economic	Geology
Agriculture and Forestry	Contaminated Land
Air Quality	Groundwater

Aviation	Surface Water

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.

AusNet has engaged widely and extensively across western Victoria using a range of communication and engagement activities tailored to various stakeholder groups. This includes a range of in person and web-based engagement tools across formal and informal channels.

Has a program for future consultation been developed?

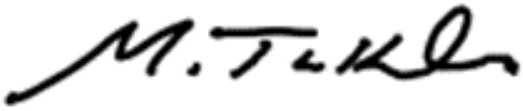
☐ NYD ☒ No ☐ Yes If yes, briefly describe.

AusNet plans to continue its engagement program across the channels mentioned above. A revised EES Consultation Plan will be developed and published on the DTP IAU Website.

Authorised person for proponent:

I, Malcolm Tinkler (full name),

General Manager, Western Renewables Link (position), confirm that the information contained in this form is, to my knowledge, true and not misleading.



Signature

Date 10 August 2023

Person who prepared this referral:

I, Carolyn Balint (full name),

Approvals Manager, Western Renewables Link (position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature 

Date 10 August 2023