Environment Effects Statement





EXECUTIVE SUMMARY

1 Executive summary

Large amounts of additional renewable energy generation are expected to be operational in the near future as Victoria seeks to transition away from coal-fired power generation. The targeted and timely delivery of transmission infrastructure in western Victoria is required to harness renewable energy generation and maintain the reliability and security of the state's electricity supply.

Western Renewables Link (or the Project) is a proposed overhead double circuit 500kV transmission line extending approximately 190 kilometres (km) from Bulgana in Victoria's west to Sydenham in Melbourne's north-west (Figure 1.1). The Project and its associated infrastructure, will enable connection to the renewable energy developments proposed and committed to in western Victoria.

The Victorian Minister for Planning has determined that an Environment Effects Statement (EES) is required for the Project under the Environment Effects Act 1978 (Vic) (EE Act). The EES is a detailed assessment of the potential environmental, social and economic impacts of a proposed project, and is used to inform government decision-making regarding project approvals. The Commonwealth Minister for the Environment and Water has also determined the Project requires assessment and approval under the Environment Protection and Biodiversity Conservation Act 1999 (Cth).

In December 2019, the Australian Energy Market Operator (AEMO) selected AusNet to deliver the Project following a competitive tender process. AusNet is the largest diversified energy network business in Victoria, which currently operates 6,500km of transmission lines across Victoria. As the Project proponent, AusNet has completed an assessment of the Project's potential impacts on the environment.

The EES has been informed by 20 technical reports which identify current conditions, as well as the potential impacts of the Project's construction, operation and decommissioning. It also proposes Environmental Performance Requirements (EPRs) which define the environmental outcomes to be achieved through applying mitigation measures to avoid, minimise, mitigate or offset these impacts.

This Executive Summary contains a high-level overview of the Project, why it is needed and the key findings of the EES. How the Project was developed, the community and stakeholder feedback that has influenced its design, and the next steps of the planning and approvals process are also discussed.

This summary should be read conjunction with the EES.





Figure 1.1 The Project

2 Project need

The need for the Project was described in the 2017 Independent Review into the Future Security of the National Electricity Market (NEM) – established by the Council of Australian Governments Energy Council (COAG). The review recommended the creation of efficient clusters of renewable energy developments known as renewable energy zones (REZs), prior to the exit of significant amounts of coal-fired generation. The review found that transmission network upgrades were necessary to connect and 'unlock' these zones. COAG recommended that AEMO, as the transmission network planner for Victoria at the time, identify potential priority projects to enable the efficient development of REZs.

In line with COAG's recommendations, AEMO released the Integrated System Plan, a strategic roadmap for developing Australia's electricity efficiently while ensuring reliability, security, and cost-effectiveness in the transition to a low-carbon future. The Integrated System Plan identified transmission investment was required to provide access to the REZs emerging in western Victoria and north-western Victoria. The need for this transmission development was described as immediate and to be completed as soon as practicable.

The development of the Project was progressed to respond to the need identified by AEMO. In May 2023 the Victorian Minister for Energy and Resources used powers under the *National Electricity* (*Victoria*) Act 2005 (NEVA) to order changes to the Project that would provide a direct connection to the Victoria to New South Wales Interconnector (VNI) West Project, which will provide a direct link between the New South Wales and Victorian energy grids. The direct link between these energy grids would strengthen the reliability and security of the Victorian transmission system, by providing access to replacement dispatchable capacity across the NEM as coal retires.

In March 2025, the Project was included on the Commonwealth National Renewable Energy Priority List (Priority List). The Priority List consists of priority renewable energy projects across Australia that have been determined to be important to support Australia's transition to net zero emissions by 2050. The Commonwealth, State and Territory Governments have collaborated to create the Priority List, and will support the projects by providing coordinated support for regulatory planning and environmental approval processes for identified priority projects.

3 Project objectives and benefits

The Project addresses the constraints of the western Victorian transmission network by providing additional transmission capacity needed to service existing renewable generation and drive the development of further renewable energy resources in western Victoria.

The Project objectives were developed by AEMO and AusNet as a guide for the development of the Project Informed by the Western Victoria Regulatory Investment Test – Transmission (RIT-T) and reinforced by the May 2023 NEVA Order. The Project objectives are presented in Table 3.1.

Table 3.1 Project objectives

Project objectives

Maintain the security and reliability of the transmission network for customers by:

- Increasing electricity transmission capacity in western Victoria to minimise the congestion constraining current and future electricity generation in the region; and
- Ensuring the Project complies with the power system security requirements of the National Electricity Rules.

Create opportunities for strategic development of the NEM by:

- Increasing electricity transmission capacity, thereby facilitating more efficient connection and dispatch of
 electricity generation in and from the region; and
- Enabling future transmission network expansion from Victoria to New South Wales.

Project objectives

Deliver infrastructure which realises a net benefit for Victorians by:

- Delivering the Project in a timely and cost-efficient manner; and
- Delivering transmission infrastructure which, by increasing capacity, facilitates the further development of renewables in western Victoria, encouraging further investment in the industry and associated economic growth.

By facilitating connection to renewable energy generation in western Victoria and direct connection between the New South Wales and Victorian energy grids, the Project will deliver the necessary transmission infrastructure to:

- Support the transition towards increased renewable energy generation in Victoria
- Maintain the reliability and security of the state's electricity, as Victoria transitions away from coalfired power generation and energy demands grow
- Facilitate more cost-efficient investment patterns across the NEM for generators and large-scale storage
- Place downward pressure on the cost of electricity for Victorian customers by enabling Victoria to harness the energy generation of the Western Victoria REZ before relying on interstate energy supply to meet demand
- Provide major economic investment in western Victoria and is expected to benefit the local and regional economy by:
 - Creating approximately 700 direct jobs during its peak construction stage, including jobs to be created in local areas surrounding the Project
 - Using local goods and services during construction
 - Working with businesses in western Victoria to maximise local participation in the Project
 - Working with Traditional Owner communities to secure jobs and other benefits for Traditional Owners throughout the Project's construction and operation stages
 - Making western Victoria more attractive for renewable energy investment, which will create future local employment opportunities.

Project benefits to Victoria are summarised in Figure 3.1.



Figure 3.1 Benefits to Victoria

Further information on the Project objectives and benefits is provided in **EES Chapter 2: Project rationale**.

4 Project assessment and approval

The Project requires assessment under Commonwealth and Victorian legislation.

The former Minister for Planning determined the Project required assessment under the EE Act in June 2020. AusNet progressed with technical assessments to inform the selection of a Proposed Route and to inform the EES.

In May 2023 the Victorian Minister for Energy and Resources used powers under the National Electricity (Victoria) Act 2005 (NEVA) to order changes to the Project that would provide a direct connection between the Victorian and New South Wales high voltage transmission networks via VNI west. The rebuild of the Sydenham Terminal Station was also removed from the Project scope.

The removal of the new terminal station at Sydenham from the Project scope required a second EES referral to be made in August 2023. The new EES referral also reflected the changes required due to VNI West, uprating the Project from 220kV to 500kV from Mount Prospect to Bulgana and a new terminal station near or at the existing Bulgana terminal station. In August 2023 the Minister for Planning confirmed that an EES was required.

A delegate for the Minister for the Environment determined on 2 September 2020 that the Project is a 'controlled action' and requires assessment and approval under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act). This decision was re-confirmed in a variation

approval on 20 November 2024. The Minister's decision stated that the Project will be 'assessed under the assessment bilateral agreement with the Victorian Government'.

The assessment and approvals process are described below and summarised in Figure 4.1. Further information is provided in EES Chapter 3: Legislative framework and approval requirements.

4.1 Commonwealth

The EPBC Act applies to projects that may have a significant impact on Matters of National Environmental Significance (MNES). The assessment of the Project will consider the potential for significant impacts to the following MNES:

Listed threatened species and communities (Sections 18 and 18A of the EPBC Act).

The Minister for the Environment and Water will be informed by the EES process, including the Victorian Minister for Planning's assessment, in determining decision as to whether to approve the Project under the EPBC Act.

4.2 Victorian

The EES process provides a comprehensive assessment of the potential environmental, social, cultural and economic impacts associated with a project. An EES prepared under the EE Act provides an assessment of the impacts of the Project which informs decision makers considering approvals under associated legislation. The key pieces of Victorian legislation under which the Project must seek approval are:

- Planning and Environment Act 1987 (Vic)
- Aboriginal Heritage Act 2006 (Vic).

The EE Act is administered by Victorian Government Department of Transport and Planning and provides the framework for the assessment of the environmental effects of projects that could have a significant effect on the Victorian environment. The EES is not an approval in and of itself. It is a mechanism that allows statutory decision-makers (Ministers, local government and statutory authorities) to understand the impacts of the Project and make an informed decision as to whether or not to approve it under the relevant legislation. The recommendations in the Minister's assessment will inform decision-makers issuing the key approvals under relevant Victorian legislation.

4.2.1 Planning and Environment Act 1987 (Vic)

The construction and operation of the Project is subject to provisions of the planning schemes of six Local Government Areas (LGAs):

- Northern Grampians Ballarat Moorabool Pyrenees
- Hepburn

- Melton.

Due to the number of planning schemes in which the Project is located and the ranged of permit triggers under each planning scheme, planning approval will be sought through a Group of Councils Planning Scheme Amendment (PSA) rather than separate planning permits. The PSA will apply a Specific Controls Overlay over a defined area for the Project and the specific controls will be defined in an Incorporated Document. This will provide a consistent set of planning controls for the Project across the six LGAs where the Project is located.

As defined by Clause 72.01-1 notes that the Minister for Planning is the responsible authority for matters under Divisions 1, 1A, 2 and 3 of Part 4 of the *Planning and Environment Act 1987 (Vic)* (and matters required by a permit or the scheme to be endorsed, approved or done to the satisfaction of the responsible authority), in relation to the use and development of land for a utility installation used to transmit or distribute electricity or for a utility installation used to store electricity if the installed capacity is 1 MW or greater.

The Inquiry and Advisory Committee that will be appointed by the Minister for Planning to review the EES would also be an advisory committee appointed to review the draft PSA, along with public comments received in relation to the draft PSA.

4.2.2 Aboriginal Heritage Act 2006 (Vic)

Approval under this act must be obtained before commencing any project or action that has the potential to impact Aboriginal cultural heritage in Victoria. Under the act, a Cultural Heritage Management Plan (CHMP) must be prepared if an EES is required. AusNet is consulting with the Registered Aboriginal Parties (RAPs), Traditional Owner groups, and First Peoples – State Relations to develop nine CHMPs for the Project under the Aboriginal Heritage Act 2006 (Vic), which will cover the Project's Activity Area.

4.3 Secondary approvals

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

- Permits under the Flora and Fauna Guarantee Act 1988 (Vic) (FFG Act), for the removal of listed threatened species or communities from public or private land
- Oversize Overmass Permit under the Heavy Vehicle National Law Application Act 2013 (Vic) for transport the use of heavy vehicles with a mass exceeding 4.5 tonnes or aggregate trailer mass on Victorian roads
- Permits under the Heritage Act 2017 (Vic) (Heritage Act) for the interference with a heritage place or object listed on the VHR, or an 'archaeological site' not listed on the VHI
- Permits to work to install and / or maintain electricity lines are required within five metres of VicTrack assets. A permit to work will be required under the *Rail Management Act* 1996 (Vic) (Rail Management Act)
- Permits under the Wildlife Act 1975 (Vic), prior to any activities that involve the disturbance or control of wildlife from activities, such as the installation of fencing, and wildlife capture, relocation, or hunting efforts
- Licence under the Water Act 1989 (Vic), for works that cross waterways, and for any activities that require water to be sourced from waterways or groundwater
- Permits under the Road Management Act 2017 (Vic), for works near or across roadways, road reserves, or requiring a modified use of the roadway (e.g., oversized vehicles, road opening, closure, or traffic diversion).



released in 2023.

Figure 4.1 Principal assessment and approvals process

5 Project description

The Project is a new double circuit 500kV overhead transmission line, approximately 190km long, stretching from near Bulgana in Victoria's west to Sydenham in Melbourne's north-west. The Project spans six local government areas (LGAs), namely, the Northern Grampians, Pyrenees, Ballarat, Hepburn, Moorabool and Melton.

Key components of the Project's infrastructure include:

- Approximately 190km of 500kV transmission line between a new terminal station near Bulgana in Victoria's west and Sydenham in Melbourne's north-west. The transmission line will be located within an easement that is predominantly 70 to 100m wide, but ranges from 55 up to 115m
- 418 double circuit 500kV lattice towers typically between 60 to 80m in height
- 36 single circuit 500kV lattice towers (18 sets of two side-by side) typically between 30 to 50m in height
- A new 500kV terminal station near Bulgana, and connections into two existing terminal stations, including an expansion of the existing Bulgana Terminal Station
- Approximately 2.5km of 220kV transmission line between the existing Bulgana Terminal Station and the new 500kV terminal station near Bulgana
- Around 155km of access tracks (total length) outside the easement, providing access to each tower site for construction, operation and maintenance. Theses tracks will be located in agreement with landholders
- Ground wires on the transmission towers may incorporate a fibre optic core to provide communication between terminal stations
- Protection system upgrades at connected terminal station sites.

A representative overview of the Project is provided in Figure 5.1.



Figure 5.1 Western Renewables Link overview

All infrastructure components are located within the areas required for Project construction and operation. The Project location can be described by the following key terms:

- **Proposed Route:** The Proposed Route is approximately 100 to 170m wide and encompasses the nominal future easement (including a buffer either side), and the terminal station areas. The Proposed Route was progressively refined from an initial area of interest and is located within the Project Area.
- **Project Area:** The Project Area is contained within the Project Land and encompasses all areas that would be used to support the construction and operation of the Project.
- **Project Land:** The Project Land encompasses all land parcels that could be used for the purpose of temporary Project construction and permanent operational components. The Project Land corresponds with the extent of the Specific Controls Overlay proposed in the draft PSA for the Project. This generally includes the entire land parcel intersected by a Project component.

The location of the Project Area and Project Land shown in Figure 5.2.

Further information is provided in **EES Chapter 6: Project description**.



5.1 Key components

The key infrastructure components required for Project construction are outlined in Table 5.1 below.

Component	Description	
Double circuit 500kV lattice towers	418 double circuit towers, typically between 60 to 80m high. The typical span between towers for the Project is between 450 and 550m.	
Single circuit 500kV lattice towers*	36 single circuit towers (18 sets of two side-by side), typically between 30 to 50m high.	
500kV transmission line	Approximately 190km, between near Bulgana in Victoria's west to Sydenham in Melbourne's north-west. The transmission line will be located within an easement that is predominantly 70 and 100m wide, ranging from 55m up to 115m.	
220kV transmission line*	Approximately 2.5km, between the existing Bulgana Terminal Station to the new 500kV terminal station near Bulgana.	
Terminal stations	A new 500kV terminal station and associated infrastructure near to the existing Bulgana Terminal Station to support the connection of the Project and future connections, including the proposed VNI West. The new terminal station will require additional land to the north-east of the existing Bulgana Terminal Station.	
	An expansion of the existing Bulgana Terminal Station to support the connection of the new 500kV terminal station into the existing 220kV switchyard.	
	A connection to the Sydenham Terminal Station, including the modification of a 500kV bay and a new 500kV bay extension with associated infrastructure to facilitate the connection of the new transmission line into the Victorian transmission network.	
	Relocation and diversion of existing 220kV transmission lines at Elaine Terminal Station.	
Access tracks	Around 155km of access tracks (total length) outside of the easement to access each tower location for construction, operation and maintenance. Access tracks will be located in agreement with landowners.	

*The 220kV transmission line is assumed to be eight sets of paired single circuit 500kV lattice towers (16 towers in total), strung with 220kV conductors.

5.2 Construction

Preparatory activities will take place first including a detailed site assessment and survey of the Project's confirmed route and proposed terminal station sites. This survey will also document pre-construction conditions at each property affected by the Project. Geotechnical investigations and opportunistic soil sampling will also be completed, and protection put in place for existing water and power infrastructure.

Key construction activities include:

- Establishment of temporary infrastructure including laydown areas and two workforce accommodation facilities for the total peak construction workforce of approximately 700 personnel (Sunraysia Highway near Lexton and Ingliston Road near Ballan)
- Access track establishment and vegetation clearing
- Construction of towers and transmission line works
- Works at terminal stations
- Site rehabilitation works
- Testing and commissioning activities.

Works may occur at multiple tower sites at the same time. Equipment used may include mobile cranes, piling rigs, concrete production facilities, bulldozers, and light and heavy vehicles. Helicopters may be used where required to install transmission lines in some locations.

Construction work will generally be undertaken during normal working hours (Monday to Friday 7am-6pm, Saturday 7am-1pm). Works can only take place outside of these hours if they comply with noise targets set by the Environment Protection Authority (EPA) Victoria or are considered Unavoidable Works or Managed-Impact Works as defined by EPA Victoria. If noise limits are likely to exceed these targets, relevant authorities and potentially noise-affected neighbours will be notified in advance.

5.2.1 Laydown areas

The Project will establish five temporary laydown areas. As shown in Figure 5.2, two of the laydown areas will be located at the existing terminal station sites (Bulgana and Sydenham), one at the new 500kV terminal station near Bulgana, and two intermediate laydown areas south-east of Lexton and south-east of Ballan (to be co-located with workforce accommodation facilities).

The laydown areas have a main compound containing portable site offices, meeting and lunch rooms, toilet block, water tanks, generator, tool sheds, workshop spaces, a pre-start meeting area, and temporary vehicle washdown areas. In addition, parking spaces will be provided for personnel vehicles as well as construction vehicles. Pedestrian walkways, temporary fencing, and gates will be clearly defined. Security systems and lighting will also be installed.

Once construction is completed, all temporary laydown areas used for the Project will be reinstated. Materials will be loaded onto appropriate tip trucks for removal off-site.

5.2.2 Construction workforce accommodation facilities

Two workforce accommodation facilities are proposed; one in the western and one in the eastern portion of the Project, co-located with each of the intermediate laydown areas. Each facility will have capacity for up to 350 personnel and will include individual accommodation units, and a communal kitchen and meals area.

These facilities aim to minimise the demand for housing by the construction workforce, limit the dependence of workers on nearby community and recreational facilities, and manage the potential negative effects of the Project's construction workforce on social cohesion.

5.3 Operation

The operation and maintenance of transmission lines is subject to stringent regulatory controls to maintain public safety and the uninterrupted supply of electricity. All transmission line operators are required to comply with these controls and provide regular reports to the relevant authorities.

Maintenance personnel will conduct inspections of the transmission line and easements at scheduled intervals. Every three years additional scheduled maintenance inspections will take place to identify and address any issues, defects or abnormalities. These inspections may be done from the ground or from the air.

In line with Australian standards, National codes of practice and its own policies, AusNet will maintain adequate clearance around the transmission line and manage vegetation and fuel hazards within the easement to mitigate bushfire impact and promote safe and reliable operation of the transmission line.

Automatic systems would monitor the transmission line and alert AusNet to damage and faults, and terminal stations would be operated remotely, with staff only required for inspections or maintenance.

5.4 Decommissioning

Decommissioning refers to the retirement of the Project infrastructure once it has reached the end of its service life. The service life of a terminal station is approximately 45 years and 80 years for a transmission line, at which time the infrastructure will either be decommissioned or upgraded to extend its service life to ensure the security and reliability of the transmission network as determined by the network planner at that time.

Decommissioning activities will be planned and carried out in accordance with regulatory requirements at the time.

Key decommissioning activities may include:

- Lowering the overhead transmission lines and ground wires to the ground and cutting them into manageable lengths to roll onto drums or reels for disposal as scrap metal
- Removing insulators and line hardware from structures at the site and disposal at an approved waste facility
- Dismantling towers in manageable sections, removing from the site and selling steel as scrap
- Excavation of footings below finish surface level
- Decommissioning and removal of terminal stations
- Easement restoration and rehabilitation, where required
- Removal of access tracks not required by landholders.

Refer to **EES Chapter 6: Project description** for more detail on construction, operation and decommissioning activities.

6 Engaging with Traditional Owners and community

Effective coordination and integration of stakeholder, landholder and community engagement with the planning and design process is critical to delivering positive Project outcomes. The communications and engagement objectives for the Project are to:

- Facilitate genuine stakeholder and community engagement, seeking input to minimise impacts, maximise benefits and meet commitments made to the community
- Strengthen relationships with the community and stakeholders to foster trust, awareness and understanding of the Project
- Establish and maintain social licence to develop, construct and operate through best practice community and stakeholder engagement
- Provide timely information to all stakeholders, including the design, planning and approvals, construction and operations processes
- Minimise impacts to stakeholders by proactively mitigating potential impacts and promptly responding to stakeholder inputs.

Engagement for the Project commenced in early 2020. It has sought to raise awareness, provide information, and gather community and stakeholder feedback and input from people living and working along the area investigated for the Project. The Project's engagement program included face-to-face and online forums, supported by digital, print, in-person communication methods.

Four key principles have informed the approach to engagement:

• Understanding

Respect

Openness

Responsiveness.

Preserving important community values and identifying environmental and heritage constraints were critical considerations in Project design. The opportunities and constraints raised through the engagement process ultimately formed the criteria for identifying the Proposed Route for the Project.

The Project has been revised throughout the EES process in response to additional information collected through consultation with Traditional Owners, landholders, community, stakeholders, and government agencies and authorities, along with further field work and technical studies.

Subject to receipt of Project approvals, the Project team will continue to engage with community and stakeholders, including landholders and neighbouring landholders, during secondary approvals, construction and operation.

EES engagement phases are summarised in Figure 6.1.

	📽 Engagement phase	
20°	Phase 1 Early-2020 Early stakeholder engagement	Shape engagement and communications approach, including Project's understanding of issues and points of interest
2	Phase 2 Apr 2020 – May 2021 AOI engagement, EES Referral lodged, commencement of EES	Engage regarding Project AOI to identify opportunities and constraints within the Project area Formal comments to inform the scoping requirements on matters to be investigated and documented in the EES
	Phase 3 Jun 2021 – Dec 2022 EES preparation, project design engagement	Single corridor engagement to inform the proposed route EES engagement regarding the proposed route and subsequent refinement of the alignment
IIII	Phase 4 Jan 2023 – Dec 2024 Engagement regarding updated project scope, second EES referral lodged, commencement of new EES	Engage regarding changes to the Project scope and to seek feedback on local matters to inform the design and impact assessments
	Phase 5 2025 EES public exhibition and Draft PSA display, IAC public hearing, Minister's Assessment	Enable public to review the EES and Draft PSA and provide written submissions on the Project to Planning Panels Victoria
2 <u>0</u> 2	Phase 6 Ongoing Landholder, stakeholder and community engagement (subject to approval)	Engage landholders, stakeholders and the community during secondary Project approvals, construction and operation

Figure 6.1 EES engagement phases

6.1 Registered Aboriginal Parties and Traditional Owners

AusNet acknowledges and respects the Wotjobaluk Nations, Djaara (Dja Dja Wurrung), Eastern Maar, Wadawurrung and Wurundjeri Woi wurrung Traditional Owners deep connection to the lands on which the Western Renewables Link Project is proposed.

The Project team has formally engaged with RAPs, Traditional Owners and First Peoples – State Relations since August 2020. This engagement has supported the development of the Proposed Route, impact assessments and preparation of the CHMPs and formed part of broader engagement activities for the Project.

RAPs and Traditional Owners consulted for the Project include:

- Barengi Gadjin Land Council Aboriginal Corporation (BGLCAC)
 - This RAP represents several Traditional Owner groups, including the Jadawadjali people
- Eastern Maar Aboriginal Corporation (EMAC)
 - This RAP also represents the Djab Wurrung people Traditional Owners group
- Dja Dja Wurrung Clans Aboriginal Council (DJAARA)
- Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC)
- Wurundjeri Woi-Wurrung Cultural Heritage Aboriginal Corporation (WWCHAC).

AusNet continues to engage with Traditional Owners for the preparation of CHMPs and benefit sharing and social value initiatives. These initiatives include additional funding for the RAPs to support the engagement required to develop the Traditional Owner Benefit Sharing Strategy. AusNet will continue to engage with Traditional Owners throughout the development of the Project.

6.2 Community engagement groups

The Project team established two groups to enable structured consultation and feedback from community representatives.

6.2.1 Community Consultation Group

The Community Consultation Group (CCG) was formed to maximise community understanding of the Project and participation in the engagement process. The CCG was established by AusNet and aimed to provide a transparent discussion forum, enabling AusNet to better understand community concerns and make the Project the best it can be for the community. Membership to the CCG is not a demonstration of support and endorsement of the Project, with members bringing a range of community views and input.

6.2.2 Council Advisory Group

A Council Advisory Group (CAG) was established in 2020 to keep council representatives informed of Project updates and to gather feedback for the Project team. The group includes an officer from each of the six councils along the Proposed Route, and members of the Project team. Information sharing in this forum complements briefings with councils and CEOs routinely offered by the Project team.

The CAG will remain in place to support local government authorities (LGAs) in the lead-up to the EES public exhibition. The CAG continues to serve as a key forum for community consultation during this final pre-approval stage.

When the Project moves to public exhibition, the advisory groups (CAG and CCG) will conclude to allow the formal process to take place independently. New advisory groups will be developed in consultation with delivery partners to support engagement through construction and delivery stages.

6.3 Energy Regional Advisory Panel

The Energy Regional Advisory Panel (ERAP) was established in 2021 to guide region-specific energy and transmission projects, identify development opportunities, and address local issues and concerns. The Communication, Stakeholder and Industry Department within AusNet runs the ERAP group.

Comprising local government, business, economic and energy leaders from Western Victoria, ERAP focusses on social licence and community impacts. The panel offers insights on regional energy issues and social value initiatives.

6.4 Benefit sharing

Benefits from the Project will be shared with the community through four activation streams, as shown in Figure 6.2. These include the Project's social value framework and initiatives, benefit sharing arrangements with Traditional Owners, the Community Benefit Fund, as well as Victorian government policy arrangements which the Project will administer.

The social value framework identifies ways in which AusNet can partner with the community to deliver long-lasting benefits. The Project team is identifying opportunities to use the construction stage to deliver economic and community value. Possible programs could include training and skills development programs and building energy resilience by providing support to facilitate community energy projects as well as support to emergency services, small grant programs and sponsorship programs. As an example of work already completed, AusNet has conducted an assessment of energy demand and use at Ballarat Community Health's seven sites. AusNet provided advice on demand management, retailer and tariff selection and the optimal mix of additional infrastructure (solar and batteries).

Subject to Project approval, the Project team will implement a Community Benefit Fund that would be co-designed in partnership with the community and key Project stakeholders. The Community Benefit Fund is a way to give back to the community impacted by the Project, within the approved Community Benefit Fund budget. AusNet will specifically seek input from Traditional Owners, Indigenous people and young people (17-25 years) who are often under-represented in engagement processes.



Figure 6.2 Benefits sharing activation streams

Further information is provided in EES Chapter 7: Community and stakeholder engagement.

7 Project development

The Project has been in development since 2017 after AEMO identified the need to upgrade existing transmission infrastructure in western Victoria. The Project was subsequently confirmed by AEMO in the 2020 Integrated System Plan as essential for addressing energy cost, security, and reliability, securing its role in the future of the NEM.

Since this time, ongoing investigations have been undertaken to narrow the area of interest for the Project, which started with a broad geographic area, refining it into potential corridors, and finally determining a Proposed Route.

For more detail about the development of the Proposed Route, see **EES Chapter 5: Project development**.

7.1 Proposed Route development

The Proposed Route has been sited and designed to meet the Project objectives and to avoid and minimise potential environmental, social and cultural heritage impacts. In particular, the Proposed Route has been developed to:

- Avoid sensitive land uses as much as possible, including dwellings, towns and settlements, and land in the Environmental Significance Overlay, Significant Landscape Overlay or Heritage Overlay
- Avoid severing or separating large areas of productive properties
- Avoid parks and reserves, including Wombat State Forest, Werribee Gorge State Park, Lerderderg State Park and the Long Forest Flora and Fauna Reserve
- Avoid identified areas of the Critically Endangered Grassy Eucalypt Woodland of the Victorian Volcanic Plain and Endangered Natural Temperate Grassland of the Victorian Volcanic Plain
- Avoid fragmenting large contiguous areas of native vegetation and habitat
- Avoid impacts on Aboriginal places, historical heritage places and areas of cultural sensitivity
- Co-locate with existing 220kV transmission lines to mitigate impacts, where possible
- Use the natural terrain and existing vegetation to screen the transmission towers from views from houses and public viewing areas, where possible
- Minimise impacts on waterways and associated habitat, and to avoid steep slopes, floodplains, areas with erosion potential, known areas of contamination and geologically significant sites
- Maintain straight lines and avoid acute angles of more than 45 degrees
- Consider transmission network diversity so there is geographic distribution of grid infrastructure.

Further information on the development of the Proposed Route is provided in **EES Chapter 5: Project development.**

7.2 Refining the Proposed Route

The Project has been progressively refined based on information from technical impact assessments and landholders during the preparation of the EES. In some instances, the results and feedback have resulted in route realignment outside the least constrained corridor. The key objective in refining the route is to avoid increasing impacts to environmental, social and cultural heritage values. Details of where and how the route has been refined can be found in **EES Chapter 5: Project development**. AusNet will continue to consider requests from directly affected landholders and communities in relation to further refinement of the Proposed Route on individual properties.

7.2.1 Responding to stakeholder and community feedback

Since engagement began in 2020, community and stakeholder feedback has identified places of environmental, social, and community importance, helping to inform Project siting and design.

These opportunities and constraints helped inform the criteria for identifying the Project's Proposed Route.

The Proposed Route has been revised throughout the EES process in response to additional information gathered through consultation with Traditional Owners, landholders and stakeholders and government agencies, as well as further field work and technical studies.

Examples of route changes in response to stakeholder and community feedback include:

- Narrowing the area of investigation around high constraint areas such as Creswick, Newlyn, Ballan, Gordon, Bacchus Marsh, Myrniong and Melton, large areas of forested public land that have high environmental and cultural heritage values
- At MacPherson Park, the Proposed Route was moved to align with the park's northern boundary, to minimise impacts to community groups and businesses in surrounding areas, sporting fields, urban area and a local school
- Changes to tower locations on individual properties based on landholder feedback to accommodate future land use and farming operations of landholders
- In response to stakeholder suggestions, the Proposed Route was realigned further north along the southern boundary of Merrimu Reservoir to avoid native vegetation and ecological values at Long Forest Flora and Fauna Reserve.

7.2.2 Considering other feasible alternative corridors and routes

AusNet's consideration of feasible alternative corridor and route options that could meet Project objectives and minimise environmental impacts began in early 2020. At each stage of the process, consideration was given to environmental, social, cultural, land use and planning constraints, opportunities provided by existing linear infrastructure corridors, and feedback and information gathered through consultation with community, government entities agencies and other stakeholders.

Identifying potentially alternative feasible corridors for the Project focused on minimising and mitigating adverse impacts on the environment and communities, while delivering a project that meets its technical and economic objectives.

An area of interest was defined based on the start and end points to be connected and refined to avoid highly constrained areas. Areas of ecology, Aboriginal and historical cultural heritage and land use planning values were mapped within the area of interest and used to identify corridors for further assessment.

Potential corridors were identified by linking the least constrained areas and aligning with opportunities provided by existing linear infrastructure where possible. This work indicated that the following corridor was the least constrained:

- Western segment (Bulgana to Waubra): Corridor adjacent to the Horsham–Ballarat 220kV transmission line
- Central segment (Waubra to Ballarat–Bendigo 220kV transmission line): Northern corridor from Waubra to Mount Prospect north of Creswick and Creswick Regional Park
- Eastern segment (Ballarat–Bendigo 220kV transmission line to Sydenham): Northern corridor from Mount Prospect to Sydenham west and south of Wombat State Forest, south of Lerderderg State Park, and north of Bacchus Marsh and Melton.

The Proposed Route, including the key alternatives and route refinements assessed, is shown in Figure 7.1.



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Over the 190km route there were a number of sections where alternative routes were assessed. Further information on the alternative routes, corridors and options that were assessed is provided in **EES Attachment I: Project development and assessment of alternatives** and summarised in **EES Chapter 5: Project development.**

7.3 Considering underground options

Different options were considered in the development of the Project, including partial underground routes at Darley and a full underground route.

7.3.1 Partial undergrounding

Partial undergrounding as a Project alternative has been assessed at Darley. This location warranted an investigation of partial undergrounding as there was the potential for high visual and biodiversity impacts, and given the proximity of Lerderderg State Park and other dwellings an alternative overhead route with less constraints and potential impacts was not identified.

Five potential partial underground routes were identified at Darley, spanning from 4 to 5.9km, including a transition station required at each end to enable connection of the overhead transmission lines to the underground cables.

The assessment determined that the partial underground routes were expected to reduce some impacts, including biodiversity impacts associated with native vegetation removal, visual amenity impacts due to the removal of prominent structures from public and private views of Lerderderg State Park, impacts to bushfire responses during operation, and impacts to known historical heritage places, including Darley military camp. However, the assessment also determined that the partial underground routes would have higher potential impacts compared to an overhead route for some environmental aspects, as they involved more ground disturbance. Potential impacts of the partial underground routes include additional potential for Aboriginal cultural heritage impacts, impacts to local waterways, underground cable trenches leading to impacts on neighbouring groundwater receptors, and additional spoil requirements increasing the potential to encounter contaminated land. In order to avoid impacts to Lerderderg State Park, the partial underground routes either traverse the Darley township or are in close proximity to residential areas. This would also lead to higher impacts to residential amenity during construction, including due to heavy vehicle traffic through the Darley town centre.

In addition, partial undergrounding at Darley would cost more and take longer to deliver. Installing high voltage underground cables costs more than placing them overhead due to the cost of the transition stations required and the cost of the underground cables themselves. Under the current regulatory framework, Project costs are passed through to consumers, leading to higher consumer prices. There are also challenges in sourcing project specific high voltage underground cables due to a limited number of manufacturers and the number of projects currently in planning, design and construction. This limits supply and results in increased cost and Project delays.

Ultimately, the use of partial undergrounding to avoid and minimise biodiversity and visual amenity impacts is not preferred given the associated ground disturbance and introduction of other environmental impacts, materially higher costs which does not align with the Project objective of cost-efficiency, and delays associated with the design, supply and further assessment and approvals which does not align with the Project objective of timely delivery to meet the urgent need for additional transmission capacity.

Further description of the assessment of partial undergrounding is provided in EES Chapter 5: Project development and EES Attachment I: Project development and assessment of alternatives.

7.3.2 Full underground transmission line

During the RIT-T process, AEMO considered other potential options to address the network need, including building a new full underground transmission line. At the conclusion of the RIT-T process, a full underground transmission line was not considered to address the identified network need, and to not be technically or commercially feasible for the purpose of the Project, and was therefore not included as a 'credible option'.

AusNet assessed the feasibility of an underground 500kV transmission line in response to community interest in undergrounding and EES scoping requirements (see **EES Attachment II: Assessment of feasibility for an underground 500kV transmission line for Western Renewables Link**). The assessment found:

- A high voltage direct current (HVDC) underground cable would not easily facilitate connections
 from renewable energy generation sources along the route in the Western Victoria REZ. This is a key
 objective and functional requirement of the Project. Underground HVDC cables require terminal
 stations with alternating current to direct current converter stations for electricity generators to be
 able connect to the cable.
- Capital costs estimated for a conceptual underground project are substantially higher when compared to an overhead project cost, and would not be likely to represent a cost-efficient solution for the transmission network requirements.

A full underground project would also take much longer to deliver, combined with a lead time of up to eight years to manufacture the required alternating current to direct current converter stations. Delivering this connection for the Western Vic REZ at the earliest possible time is a key requirement to meet the energy needs of Victoria and to help replace supply from retiring coal-fired power plants.

8 Key impacts

The EES assesses the potential environmental impacts from the construction, operation and decommissioning of the Project. The EES identifies the existing conditions and values that could be impacted by the Project across a range technical study areas, and addresses the matters outlined in the EES scoping requirements.

The Project's proposed design has avoided impacts, as far as reasonably practicable, considering the Project's competing technical, environmental, social, and economic requirements. Potential impacts have then been assessed based on the design, construction methods and operational activities as described in **EES Chapter 6: Project description**.

To reduce impacts that could not be avoided, technical specialists have recommended mitigation measures in line with the mitigation hierarchy - avoid, minimise, manage, rehabilitate and offset. These recommended measures have informed the development of EPRs.

EPRs define the environmental outcomes that must be achieved through the implementation of mitigation measures during design, construction, operation and decommissioning of the Project. EPRs seek to avoid and mitigate identified impacts and the risk of harm to human health and the environment so far as is reasonably practicable.

EPRs provide opportunities for Principal Contractors to explore innovative or alternative approaches to achieving the required outcomes, regardless of the final design of the Project. The Principal Contractor and Ausnet can determine the best way to achieve EPRs and manage impacts, which allows for flexibility to optimise design solutions and construction methods.

In developing EPRs, technical specialists have considered industry standards and guidelines, good practice and the latest approaches to mitigating impacts.

A total of 20 technical reports were completed to inform the EES and understand the impacts of the Project on environmental, social and cultural values. Technical reports have been completed for the following topics:

- Biodiversity and habitat
- Aboriginal cultural heritage
- Historical heritage
- Landscape and visual
- Land use and planning
- Bushfire
- Economic
- Agriculture and forestry
- Aviation
- Electromagnetic interference (EMI) and electric and magnetic fields (EMF)

- Air quality
- Noise and vibration
- Transport
- Social
- Geology and soils
- Contaminated land
- Groundwater
- Surface water
- Greenhouse gas
- Climate change.

The outcomes of the impact assessments have informed the design and development of the Project and the selection of a Proposed Route that has sought to avoid and minimise impacts (Section 7.2).

The following sections provide an overview of the technical reports that have identified high to moderate residual impacts. Moderate and high residual impacts are those impacts that will have a longer term effect, extend across multiple locations or receptors, or are more significant in nature, after mitigation has been applied.

All other residual impacts identified were low or lesser. These impacts are summarised in Section 8.11, and are discussed in more detail in the EES chapters.

8.1 Project Area and study area

The Project Area comprises all locations required to support the construction and operational components of the Project, as described in Section 5 and Figure 5.2.

The study area for the EES technical reports is specific to each discipline and defined by the technical specialist. The study area defined by each technical specialist has considered the local, regional, or state context needed to understand the issues and assess the impacts of the Project relevant for their discipline. The study area for each technical report is also described in each of the technical chapters.

8.2 Biodiversity and habitat

Given the scale of the Project and the level of vegetation clearance required for it, impacts to biodiversity and habitat values are unavoidable. To help reduce these impacts, a key consideration in route selection and refinement has been avoiding native vegetation, threatened species habitat, and threatened ecological communities (TECs), where possible.

The Project is located in Western Victoria where a lot of native vegetation has been removed historically to enable the establishment of agriculture, settlements and other land uses. From the outset, the Project has therefore sought to avoid large contiguous areas of native vegetation and habitat, and to prevent new easements from fragmenting national parks, state and regional parks, and state forests. The location, extent, and condition of native vegetation were key design parameters when identifying and developing the Project Area. Initial field investigations informed further refinements based on the vegetation identified.

As the Project Area was refined, further consideration was given to avoiding and minimising impacts to native vegetation, threatened species habitat and TECs, including:

- Locating the Project to avoid Wombat State Forest, Werribee Gorge State Park, Creswick Regional Park, Lerderderg State Park and the Long Forest Nature Conservation Reserve) and identified areas of the critically endangered EPBC Act listed Grassy Eucalypt Woodland of the Victorian Volcanic Plain
- Locating the Project to avoid fragmenting large contiguous areas of native vegetation and habitat, including a number of smaller conservation reserves such as Mt Beckworth Scenic Reserve and Ben More Bushland Reserve
- Identifying a high-quality area of the critically endangered EPBC Act listed Natural Temperate Grassland of the Victorian Volcanic Plain on the Kingston Road Travelling Stock Route and establishing this as a no-go area for all Project activities
- Making changes to the Project around Merrimu to avoid important biodiversity values around Long Forest Flora and Fauna Reserve
- Making changes to the Project around Hayden's Hill, including reducing potential impacts to the Southern Greater Glider and threatened flora species
- Co-locating the Project with an existing 200kV transmission line within the Lexton Bushland Reserve, to reduce fragmentation in the surrounding areas of high-quality bushland
- Locating towers and access tracks to avoid wetland and riparian areas, patches of native grassland and known nesting trees.

For locations that could not be surveyed, the biodiversity assessment relied on desktop information to map the likely extent of native vegetation. This included information from Department of Energy, Environment and Climate Action (DEECA) modelling, TEC distribution advice policy statements, and extrapolation of data from adjacent parcels where field surveys were completed. As not all properties could be accessed for field investigations, a conservative approach has been taken, assuming the presence of ecological values where they may occur.

The majority of biodiversity impacts are expected during the construction stage and from ongoing management during operation. Impacts may be direct or indirect. Indirect impacts during construction may include noise, dust and light pollution, erosion and sedimentation, spread or introduction of weeds, pests and pathogens, including by vehicle and plant movement, and habitat fragmentation. Direct impacts from the Project include the physical clearing of native vegetation for the development of the transmission line and associated easement, where vegetation occurs.

The direct removal of vegetation poses the greatest potential for impacts on biodiversity and habitat values. To assess these impacts, the biodiversity assessment assumed full clearance of vegetation within the entire easement corridor. This is highly conservative as it assumes all vegetation within the easement will be impacted. However, surveys will be conducted before construction begins to inform design refinements and reduce the area of impact where practicable. Based on this conservative assessment method, the following impacts have been identified:

- Removal of 238.61ha of native vegetation, comprised of 24 Ecological Vegetation Communities (EVCs), 844 large canopy trees and 213 scattered trees, resulting in a moderate residual impact. Although the Project will require the removal of native vegetation from several EVCs, which could be meaningful at the population level, the direct removal of vegetation is unlikely to significantly alter values across the wider landscape.
- Removal of two FFG Act listed TECs, resulting in a moderate residual impact:
 - Up to 7.31ha of Creekline Grassy Woodland (Goldfields) Community (including 6.05ha confirmed and 1.26ha modelled)
 - Up to 17.33ha of Rocky Chenopod Open Scrub Community (including 3.33ha confirmed and 14.67 modelled).

- Removal of five FFG Act listed threatened flora species, resulting in a moderate residual impact:
 - Buloke (27 individuals and 47.25ha of potential habitat)
 - Brooker's Gum (233 individuals and 22.83ha of potential habitat)
 - Yarra Gum (63 individuals and 40.23ha of potential habitat)
 - Bacchus Marsh Wattle (500 individuals and 21.53ha of potential habitat)
 - Fragrant Saltbush (approximately 3,081 individuals and 33.05ha of potential habitat.
- Removal of two FFG Act listed threatened flora species, resulting in a high residual impact:
 - Brittle Greenhood (approximately 1,388 individuals and 20.60ha of potential habitat)
 - Melbourne Yellow Gum (534 individuals and 19.42ha of potential habitat).
- Ground disturbance and native vegetation removal resulting in a moderate residual impacts at three DEECA wetlands. The most significant being Masons Swamp which is supporting habitat for FFG Act listed fauna and flora and EPBC Act listed flora
- Removal of habitat for four threatened fauna species listed under both the EPBC Act and FFG Act:
 - Golden Sun Moth (40 individuals recorded, 21.00ha of habitat impacted, including 9.71ha of confirmed habitat and 11.29ha of potential habitat) resulting in a moderate residual impact
 - Southern Greater Glider (12.06ha of potential field mapped habitat impacted) resulting in a low to moderate residual impact
 - Striped Legless Lizard (1.44ha of potential field mapped habitat impacted) resulting in a moderate residual impact
 - Victorian Grassland Earless Dragon (3.48ha of potential field mapped habitat impacted) under the guidelines resulting in a moderate residual impact.
- Removal of three EPBC Act listed TECs.
 - Up to 16.61ha of Endangered Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia (including 6.79ha confirmed and 9.82ha modelled), resulting in a high residual impact
 - Up to 5.37ha of Critically Endangered Natural Temperate Grassland of the Victorian Volcanic Plain (including 4.47ha confirmed and 0.90ha modelled), resulting in a moderate residual impact
 - Up to 17ha of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (all 17ha of this TEC is modelled, however based on desktop reviews and completed surveys it is estimated that no more than 5ha of the modelled extent is likely to qualify as the TEC) resulting in a moderate residual impact.

When assessed against the criteria from the EPBC Act Significant Impact Guidelines 1.1, the Project is likely to have a significant residual impact on two EPBC Act listed TECs. Field surveys completed for the biodiversity and habitat assessment have verified the presence of the Endangered Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia and Critically Endangered Natural Temperate Grassland of the Victorian Volcanic Plain. The significant impact on these two TECs indicates there is the potential for a reduction in extent, fragmentation and change in species composition in the area associated with Project construction activities. The presence of the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland has not been verified with field surveys, however there is also the potential for significant impact on this TEC.

A draft Offset Management Strategy has been prepared to confirm the approach to obtaining offsets based on the conservative approach of using field surveys and modelled data, in accordance with the EPBC Act Environmental Offsets Policy and Victorian Guidelines for the removal, destruction or lopping of native vegetation. Refer to **EES Attachment V: Offset Management Strategy** for the current draft. The outcome of all completed surveys will inform the Project's final offset requirements.

Surveys will be undertaken to confirm presence of both FFG Act and EPBC Act ecological values in areas previously unsurveyed due to access constraints. These surveys will inform the final design and opportunities to avoid vegetation and species habitat removal through route refinement or the establishment of no-go zones in areas where native vegetation and species habitat will be retained. The approach to these surveys and requirements to avoid and manage impacts will be documented in a Vegetation Management Plan.

Pre-clearance inspections will be completed by a suitably qualified ecologist prior to habitat removal. To avoid and minimise impact on fauna, work restrictions during nesting and breeding times within 100m of critical habitat of relevant native fauna species may be required. A Fauna Management Plan will outline the measures to be put in place across the Project to avoid and minimise impacts to all Fauna. Threatened Flora and Fauna Management Pans will also outline site-specific measures to further minimise biodiversity impacts where possible.

A Biosecurity Management Plan will be developed for the Project which will require contamination and hygiene protocols to be implemented to minimise the potential of spread of weeds and pathogens. The plan will include requirements for washdown procedures and monitoring for high-threat pest species.

Residual impacts to EPBC Act and FFG Act listed species were assessed as low to high after considering measures being implemented to comply with EPRs. As impacts to EPBC Act list species are considered unavoidable, they will require offsets under the EPBC Act Significant Impact Guidelines.

8.2.1 Vegetation management

Ongoing management of vegetation within the easement will be the primary operational impact to native vegetation and species habitat. Vegetation management is required to maintain safe clearances under transmission lines and to maintain permanent access tracks. Due to the level of vegetation removal, the residual impacts to biodiversity and habitat values during operation is moderate to low.

Monitoring following completion of construction and during the Project's operation will assess the extent and condition of retained vegetation, threatened flora species and TECs within the transmission easement. Monitoring will also look for the presence weed in areas of native vegetation and revegetation.

Other potential impacts may include the introduction of weeds and pathogens, which will be managed according to the Biosecurity Management Plan. The plan will include vehicle hygiene, sourcing weed free materials, and other weed, pest and pathogen prevention and management measures.

8.2.2 Wetlands

Project infrastructure, such as towers and access tracks, will have a moderate impact on three wetlands mapped on the DEECA inventory ('DEECA wetlands'), due to the removal of native vegetation and threatened flora species within the wetland boundaries. This includes a temporary freshwater swamp, grassland patch and permanent freshwater swamps (Masons Swamp). The largest of the three, Masons Swamp, supports habitat for FFG Act listed fauna and flora and EPBC Act listed flora, including Western Burrowing Cray habitat, Swamp Fireweed and Floodplain Fireweed.

Impacts to these wetland areas will occur where direct removal of vegetation is required. For other wetlands, impacts are generally low due to the type of infrastructure proposed (i.e., access road across a dam wall or removal of a scattered exotic tree for fuel reduction) and / or it is generally in a relatively dry location, lacking native or wetland vegetation.

To manage residual impacts to wetlands, measures will be implemented to minimise impacts to water quality and minimise the potential for erosion and sedimentation, stormwater runoff, and contamination entering the surface water system. The measures will be documented in the Surface Water Management Plan, as required by the EPRs. Following the implementation of these measures to comply with EPRs, the residual impact to wetland areas directly intersected by Project infrastructure was assessed to be moderate to low due to the removal of native vegetation and potential impact to threatened species at three DEECA wetlands, and limited impacts to the remaining DEECA wetlands intersected by the Project.

8.2.3 Collision risk

The Proposed Route crosses several Important Bird Areas, including movement corridors. Due to the long and linear nature of the Project, there is a risk that bird or bat species could collide with the overhead transmission line. The risk of collision is associated with a species' flight behaviour and their ability to detect and avoid the overhead transmission line.

The various bird and bat species known throughout the Project Area all have reasonably specific flight behaviours associated with their food sources, their movement patterns in the landscape, and their habitat. Many migratory bird and bat species will occupy the air space above the canopy, putting them more at risk. While some larger bird species have a higher risk of collision than smaller and more agile species, no species will be subject to major population level impacts. This is due to the Project being located away from large wetland complexes and coastal zones, which are utilised by threatened bird species at higher risk, and due to the sizing and spacing of the conductors associated with transmission lines.

Areas will be identified where there is a higher risk for collision or electrocution of birds due to proximity to preferred bird habitat such as wetlands, forested areas or feeding sites. Measures will be implemented at the key risk areas, which may include suspended insulators and/or vertical line marking such as bird flappers, to improve the visibility of the transmission line and minimise the potential of collision. These higher risk locations and mitigation measures will be identified and documented in the Collision Risk Management Plan, as required by the EPR. Following the implementation of measures to comply with EPRs, the risk of collision associated with the presence of operational Project infrastructure will be reduced. The residual impacts vary depending on species, however the overall residual impact is moderate to low.

For further information on all aspects of biodiversity and habitat see EES Chapter 8: Biodiversity and habitat and EES Chapter 27: Matters of National Environmental Significance.

8.3 Aboriginal cultural heritage

At the time of European contact, the Project Land was occupied and utilised by clans from the Jadawadjali, Djab wurrung, Dja Dja Wurrung, Wadawurrung, and Woi wurrung. These clans are represented by five Registered Aboriginal Parties (RAPs), the Barengi Gadjin Land Council Aboriginal Corporation, Eastern Maar Aboriginal Corporation, Dja Dja Wurrung Clans Aboriginal Council, Wadawurrung Traditional Owners Aboriginal Corporation, and Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation, respectively.

Aboriginal cultural heritage values are places and objects that are of significant value to Aboriginal Traditional Owners and the wider community. There are tangible and intangible Aboriginal heritage values that may be impacted by the Project. Tangible values are physical artefacts and sites, while intangible cultural heritage includes knowledge, beliefs, cultural practices and language. Generally, large scale evidence of diverse and wide-ranging heritage activities across the study area, such as huts, weirs and traps, has not survived due to high levels of surface and below ground disturbance. However, field investigations identified archaeological materials in the study area, including surface and subsurface artefacts, scarred trees and ring trees, earth features, quarries and stone features. Predictive modelling also indicates Aboriginal Places are likely to be found on rises, hill slopes and crests, ridgelines and terraces or on elevated landforms within 200m of water sources.

The Project design has been an iterative process informed by cultural heritage assessments, aiming to avoid and minimise impacts on as many Aboriginal cultural heritage values and areas of sensitivity as possible. Where known Aboriginal cultural heritage values could not be avoided, physical disturbance from construction activities has the potential to impact them.

The assessment identified 77 known Aboriginal cultural heritage values, comprising of five previously recorded and 72 new values, (66 tangible, six intangible comprising cultural landscapes identified

during the Cultural Values Assessments (CVAs)) within the Project Area. CVAs were completed with RAPs and Traditional Owners to identify intangible values along the Proposed Route.

Where impacts to Aboriginal cultural heritage values were unable to be avoided through design and alignment changes, there is the potential for physical disturbance from construction activities to impact tangible values. The EPRs require the implementation of measures that will be defined in the CHMPs to minimise the potential impacts to tangible values, such as on-site works exclusion zones, surface and sub-surface salvage, and other measures specific for each value. The assessment found that there would be 11 moderate residual impacts (to tangible values) and 19 high residual impacts (to both tangible and intangible values) related to harm or disturbance of sites and places by construction activities, and the ongoing presence of infrastructure.

There is potential for previously unknown Aboriginal cultural heritage values to be discovered during construction. The CHMPs will also contain contingency conditions for unexpected finds, outlining protocols for minimising harm, reporting, and any further management of newly discovered cultural values.

Nine CHMPs are being prepared for the Project in consultation with RAPs, Traditional Owner groups, and First Peoples – State Relations. The CHMPs will include general and specific management conditions to protect and manage registered as well as unidentified tangible Aboriginal places and values, and will serve as the primary mechanism for managing the potential impacts on Aboriginal cultural heritage. Ongoing consultation will continue with each individual RAP and Traditional Owner group during construction.

The Aboriginal cultural heritage assessment also identified the potential for the Project to disturb intangible connections to place. The presence of operational Project infrastructure will result in a high residual impact to six intangible Aboriginal cultural heritage values, or cultural landscapes, identified during the CVA process, which fall outside the scope of the CHMPs being prepared. AusNet will continue to engage with the RAPs to work through the recommendations in the CVAs on how to minimise impacts to intangible values. This could include measures to further avoid and minimise remnant vegetation, waterways, cultural landscapes, and native fauna through planning, design, and construction methods.

For further information see EES Chapter 9: Aboriginal cultural heritage.

8.4 Landscape and visual

The landscape and visual assessment considered the Project's potential to impact surrounding landscape and visual values. Landscape and visual values refer to the importance placed on the aesthetic qualities and character of a landscape, including how it is viewed and experienced by people. The Project spans landscapes of varied character and visual conditions including highly modified landscapes with a low sensitivity to change, as well as landscapes valued for their natural and cultural features and values, amenity, biodiversity and recreational uses.

During construction and operation, the Project may impact the landscape and visual values of significant landforms, both on its own and in combination with other visually prominent developments within the region. The Project been designed to avoid and minimise landscape and visual impacts as far as possible. The Project has avoided significant and protected landscapes where practicable, provided setbacks to townships and closely settled areas to reduce impacts, and used double circuit rather than single circuit towers to reduce visual clutter.

Construction of transmission line infrastructure, including site preparation, construction of towers and transmission line stringing works, will progressively move along the Proposed Route. Changes in visual amenity from these activities will be temporary and short-term in duration. The primary visual impacts for the Project during this time are associated with construction activities at the proposed laydown areas and workforce accommodation facilities. Construction works at these locations will occur for the duration of the construction timeframe, up to two years.

Existing vegetation screening will minimise the potential visual impact for most dwellings and public viewpoints during construction near the proposed laydown areas and workforce accommodation facilities. However, construction works will be visible from two dwellings south of the laydown area at the new 500kV terminal station near Bulgana, resulting in a high residual impact. Vegetation screening would not manage the potential impact at these dwellings due to the time required for vegetation to establish to the level to provide screening of the laydown area. However, the extent of visual impacts will be minimised through standard site hygiene measures as required in the Construction Environmental Management Plan (CEMP). Following construction works, temporary infrastructure will be removed, and the sites will be rehabilitated and returned to their prior use, where practicable. During operation, landscape screening would assist to partially screen or filter views of the Project towers and the new 500kV terminal station near Bulgana. Whilst this is contingent on eligible land title holder approval, screening would reduce the impact to low.

During operation, the presence of Project infrastructure has the potential to alter the character and amenity of locations along the Proposed Route. Due to the Project impeding views of significant landscape features, the proximity and prominence of the Project and the limited effect of vegetation screening, the Project will have high to low residual impacts to significant landscape values and landforms in some locations. The residual high and moderate impact locations include:

- A high residual impact for publicly accessible areas at:
 - Bolwarrah Weir: landscape screening could focus on screening the Project from the existing picnic tables and chairs. However, the implementation of screening may not be desirable as they could also remove views enjoyed by visitors.
 - Bald Hill Activation Area: landscape screening could focus on screening the Project from the six sculpture locations and entrance from Swans Road. However, it is recognised that the implementation of landscape screening would alter the northerly panoramic views available from Bald Hill.
 - Buried Rivers of Gold tourist drive: Project infrastructure is not located within the key view lines, but directly behind or surrounding the viewing location. Landscape screening has not been recommended, as while it may have benefit, any plantings would be located in adjoining private land, and it may also screen long distance views which would still be visible through the transmission towers.
- A moderate residual impact for publicly accessible areas at:
 - Merrimu Reservoir: landscape screening will filter views of the Project to the east, while retaining views of across the reservoir to the vegetated hills to the north. Some redesign of the public facilities and War Memorial to orientate them away from the Project will also mitigate impacts. However, landscape screening at this location will also limit views over canopy vegetation within Long Forest.
 - Newlyn Reservoir: towers will be highly visible from an area that permits public access. However, the towers will not obscure views of the water or volcanic cones that visitors and locals enjoy. Landscape screening has not been recommended at this location as it would remove views across the Newlyn Reservoir and Mount Bullarook.

Where landscape screening or other specific mitigation has been identified as potentially reducing impacts at these sensitive public viewing locations, consultation with landholders or land managers will be undertaken. Landscape screening or other specific mitigation relevant to each site will be offered to the landholders or land managers, and undertaken on a voluntary basis.

From most dwellings in townships and urban areas, views toward the Project will be screened by fencing and vegetation in neighbouring allotments or roadside vegetation. Residual impacts on neighbouring dwellings during operation are considered high where landscape screening does not effectively mitigate views from private living areas. This includes neighbouring dwellings in farming areas that are immediately adjacent to the Project, and dwellings in the elevated areas in Darley generally to the west of Links Road. There are 27 dwellings on the northern side of Pamela Court and Augusta Place and three at the northern end of St Andrews Way. Of these dwellings, three were accessed and directly assessed. Each dwelling assessed in this area has been established to take in views across the Lerderderg River, cleared farming land and the Lerderderg State Park. The likelihood of a high level of visual impact from all dwellings along this location in Darley is conservative as not all dwellings have been accessed and directly assessed. The visual impact from other dwellings along this location may vary depending on the orientation, outlook, fencing and other structures and intervening vegetation in the outlooks and views from individual dwellings.

Typically, the established dwellings in farming areas are set amongst existing vegetation that provides protection against winds. This vegetation will also assist in screening or filtering views in the Project's direction. Landscape screening will be offered to eligible land title holders with dwellings located within 2km of the Proposed Route with towers that are visible from habitable rooms within the dwelling or attached areas of private open space within curtilage of the dwelling. EPRs require the design and siting of landscape screening to be undertaken voluntarily and in concert with the eligible land title holder.

For further information see **EES Chapter 11: Landscape and visual.**

8.5 Bushfire

Bushfires are a natural part of Australia's ecosystems, and Victoria often experiences weather conditions that can lead to dangerous bushfire events. Most of the Project Land has been designated by the Victorian Government as bushfire prone. There is potential for the Project to affect bushfire conditions during construction and operation. With implementation of the planned design, construction and operational measures, bushfire risk in many parts of the landscape surrounding the Project will remain high but will not be materially increased by the Project.

The Project may impair operation of strategic fire control lines by crossing a landscape that is prone to bushfires and experiences frequent smaller and infrequent larger fires, and crosses public roads that are designated in Municipal Fire Management Plans as strategic fire control lines and fuel breaks. While ground-based CFA crews can safely drive below transmission lines, CFA electrical safety procedures do not permit CFA crews to work / fight fires while within the transmission line easement. Depending on the relative orientation of the approaching fire front and the control line / fuel break, this restriction may impact aspects of the fire response. During Project operation a moderate residual impact remains where the Project crosses fire control lines and fuel breaks, which could mean fires spread farther than expected, causing greater or more severe damage. This could be minimised through the CFA adapting their fire response tactics to account for the Project infrastructure. In other areas, the design of the Project avoids strategic fire control lines and fuel breaks, resulting in a low residual impact.

As the Project's operator, AusNet will comply with the *Electrical Safety Act 1998 (Vic)* and its regulations, including the requirement that AusNet must maintain and implement an Electricity Safety Management Scheme that is accepted by Energy Safe Victoria. The Scheme includes AusNet's existing Bushfire Mitigation and Vegetation Management plans. The Bushfire Mitigation Plan documents how AusNet manages bushfire risks across its entire transmission network. The Vegetation Management Plan documents measures required to maintain prescribed clearance spaces and compliance with the Electricity Safety (Electric Line Clearance) Regulations 2020. These measures will be supplemented by fire detection and suppression activities by emergency services.

Project construction activities and operational infrastructure may cause on-site ignition of a fire. With no controls in place, this could occur through construction activities (e.g., hot works that generate sparks) or operation (e.g. via lightning striking a transmission tower). Offsite ignition could also damage transmission line infrastructure, temporarily disrupt power supply, and threaten the safety of maintenance crews. In consultation with fire authorities, AusNet will implement mitigation measures via conditions of the draft Incorporated Document (as part of the PSA), to eliminate the potential of on-site bushfire ignition and escape, so far as reasonably practicable. This includes designing the laydown and workforce accommodation facilities to achieve required setback distances from classified vegetation to meet various Bushfire Attack Levels and help prevent potential bushfires reaching buildings. These measures will be documented and implemented through Construction Bushfire Management Plans

(both Project-wide and for the workforce accommodation facilities). Additionally, requirements for daily readiness and preparation for bushfires, will be documented and implemented through Project-wide and workforce accommodation facility Emergency Management Plans. With these mitigations, the residual construction fire ignition impacts are low to very low.

During operation, the infrastructure would be resilient under reasonably foreseeable wind conditions that may be experienced both during a fire and at other times, in accordance with relevant design standards (AS/NZS 7000:2016 Overhead line design; AS/NZS 1170.2-2021 Structural design actions. Part 2: Wind actions). Existing standard AusNet controls to avoid and manage ignition impacts, will also be applied during operation, resulting in a very low residual operational fire ignition impact.

Project infrastructure has the potential to hinder aerial and ground-based fire suppression efforts during construction and operation, potentially causing fires to spread more than usual. Aerial responses will not be able to access the relatively small number of farm dams located very close to the Project infrastructure, however there are many other nearby farm dams or larger water supply reservoirs available across the Project Area. While unlikely, fire response aircraft could also make contact with Project infrastructure, leading to an air crash / safety incident. To manage aerial impacts the Project will inform pilots (via the Civil Aviation Safety Authority) of the presence of infrastructure. During construction ground-based CFA crews cannot work near the infrastructure if there is uncertainty around electrical hazards. The CFA will be notified about infrastructure not being electrically active, and then again when it is electrified, in accordance with the draft Incorporated Document. Operational impacts on ground-based response are moderate and all other residual impacts to fire suppression activities are low to very low after implementation of measures to comply with the draft Incorporated Document conditions and EPRs.

Bushfire fuel management activities may be constrained due to Project infrastructure and associated access limitations and restrictions. The construction stage is short-term with a non-electrified transmission line. With planned reduction burns mostly undertaken in native forests on public land at limited locations near the Project, no interruption or constraint to fuel management activities is expected during construction. During operation, planned burning is permitted near electricity transmission lines with appropriate controls and safety clearances, and while machinery will need to maintain appropriate separation to avoid contact with, and damage to, the towers, mechanical clearing can also be undertaken. Residual impacts are expected to be very low.

The Project crosses priority bushfire access and egress routes at four locations. These are designated in Municipal Fire Management Plans as priority evacuation routes that also allow emergency services access to firegrounds. Potential structural failure of Project infrastructure due to wind, sabotage or contact with a vehicle or farm machinery, could impede or prevent evacuation from, or access to, fire grounds. A collapsed tower or dropped powerline would not be electrically active during construction, and would most likely be deactivated automatically if the transmission line made earth contact during operation, in accordance with protections systems in the Electricity Safety Management Scheme. Additionally, Energy Safe Victoria safety requirements do not advise crossing fallen transmission lines unless AusNet confirms it is safe to do so. Though the combination of failure occurring at the time and place needed for escape is unlikely, any delay exposes evacuees and crews to harm from the approaching fire. To minimise this impact, design criteria have been adopted to place transmission towers outside of public road reserves to reduce the chance of accidental contact by vehicles, and at sufficient distances from most fire access routes and fire control lines. Additionally, tower design standards provide for resilience under reasonably foreseeable wind conditions and accidental damage from contact with vehicles. Notifications will be made to CFA and other emergency services about infrastructure being electrically active/not active, and construction access on key routes will be stopped during active bushfires or on days with catastrophic fire weather, in accordance with the Construction Bushfire Management Plans. Residual impact to access and egress routes is low in the Lerderderg Gorge Road area, north of Darley, and very low in other areas.

For further information see EES Chapter 13: Bushfire.

8.6 Social

The Project traverses six LGAs with varying characteristics, from social, economic and land use contexts focussed on agricultural production in the west, to areas in the east that are increasingly influenced by metropolitan Melbourne. A social impact assessment was completed to understand the potential impacts of the Project on the community, including both indirectly and directly affected landholders. The assessment considered potential social impacts due to changes in land use and amenity such as air quality, noise, and traffic (which are discussed in the discipline specific studies), and due to the Project's workforce. The social impact assessment considers the potential impacts of these changes on individuals and groups within the community, which in some cases has resulted in different impact ratings.

There is the potential for construction activities to lead to amenity impacts from noise, traffic and air quality (dust). Although the amenity changes will be temporary, they may pose a source of irritation for landholders. Temporary changes to amenity will be managed through the implementation measures to comply with EPRs developed by the noise and vibration, traffic, and air quality technical specialists. These measures require the development and implementation of Traffic, Air Quality, and Noise and Vibration management plans to address potential impacts from noise, traffic and dust. With these measures in place, the residual social impacts from changes to amenity during construction is moderate for directly affected landholders, moderate to minor for surrounding landholders, and minor to negligible for the broader community.

During construction, the presence of a peak workforce of approximately 700 personnel has the potential to lead to impacts to housing, community facilities and services, and social cohesion. To avoid and minimise these potential impacts, the Project will provide two workforce accommodation facilities, as described in Section 5.2.2. These facilities would avoid generating additional demand for housing by the construction workforce, limit the dependence of the Project workforce on nearby community and recreational facilities, and manage the potential negative effects of the Project's construction workforce on social cohesion. Residual social impacts in relation to workforce and social profile are considered to be positive, assessed as minor to negligible, during construction.

The presence of Project infrastructure has the potential to affect the attractiveness of the area's scenic qualities and people's lifestyle. The attractiveness of some dwellings and properties may be reduced, which may challenge a shared sense of identity among rural residents, as landholders and residents adjust to altered conditions.

Mitigation measures will be implemented to address impacts identified by a number of other technical disciplines which will minimise and manage social impacts during operation. These include consultation with landholders on mitigating visual impacts (e.g., landscape screening), implementing a range of business mitigation and support strategies (described in more detail in Sections 8.7 and 8.8), a Property Access and Management Plan (PAMP), a Complaints Management System, a Biosecurity Management Plan and a Residential Mitigation and Support Strategy.

Residual impacts during operation include:

- The Project may cause inconvenience for directly affected landholders in the western part of the Project and in areas within the eastern part of the Project east of Darley, and may be viewed as an unwanted intervention. The resulting impact was assessed as moderate.
- The Project may impact on the attractiveness of smaller equine properties and lifestyle properties of directly affected landholders in Darley and surrounds, and fears relating to bushfire safety may contribute to landholder concerns in this area. The resulting impacts were assessed as major to moderate.
- The Project may challenge a shared sense of identity among directly affected landholders in the central parts of the Project, built on appreciation of the area's scenic qualities and peaceful rural lifestyle. The resulting impact was assessed as major.

- The Project may reduce the attractiveness of some dwellings and properties as a place to live or conduct a business for surrounding landholders, potentially leading to frustration and emotional strain, and disruption to aspirational lifestyles. The resulting impacts were assessed as major to moderate.
- Views of the Project from local roads, the periphery of settlements and some community facilities and open spaces may detract from local residents' enjoyment of a valued rural lifestyle, their appreciation of the area's landscape qualities and the enjoyment of particular recreational facilities, and from their sense of place. Resulting in moderate to minor impacts for the broader community in most locations, and major to moderate impact in Darley and surrounds.

The Project has the potential for interference with the operation of nearby tourism-based businesses, which would add to the overall strain of the Project on the local community. A Business Mitigation and Support Strategy for directly affected businesses, and a Business Mitigation and Support Strategy for eligible businesses within 2km will be implemented to avoid and minimise impacts on businesses that could be directly affected by the Project. The strategies will address impacts that could occur as a result of the transmission line easement being placed on land associated with the business, and for businesses within 2km of the Project that rely on the existing character of the natural landscape to attract customers. These strategies will include, but are not limited to, measures to avoid and minimise air quality, noise and vibration and traffic impacts on business operations, maintain access for business operations, avoid impacts on business assets or reconfigure, relocate, re-orientate, or re-establish assets in an agreed location, and provide early and ongoing information and notification about proposed works in proximity to the business.

For further information see EES Chapter 21: Social.

8.7 Economic

The top employing industries across the study area are health care and social assistance; agriculture, forestry and fishing; construction; education and training; and retail trade. A detailed economic assessment was completed to understand the Project's impact on local businesses and industry. Economic impacts have been assessed through a quantitative economy-wide analysis, and a qualitative assessment of industry-level business impacts.

The economy-wide analysis modelling assessed the direct and flow-on macroeconomic impacts of the Project. The modelling showed by Financial Year 2050:

- Increased investment and consumption in Victoria would drive an increase in Australia's Gross Domestic Product (GDP) by \$4.5 billion and the Gross Regional Product (GRP) of the study area by \$0.9 billion.
- Direct investment from the Project into the study area, in addition to induced investment in renewable generation and storage, facilitated but the Project would total \$2.0 billion. This impact is partially offset by changes elsewhere in Australia, as cheaper Victorian electricity generation replaces more expensive generation investment that would otherwise have been built elsewhere across the rest of NEM. As a result, the overall increase to private investment across Australia is approximately \$1.0 billion.
- Increased private and government consumption of goods and services by \$3.7 billion and \$1.4 billion respectively, due to cost savings in the energy sector being passed on to consumers.
- A net \$4.7 billion increase in living standard as a result of generation and transmission of electricity more efficiently with the Project.

The Project will also contribute both directly and indirectly to new employment opportunities in the study area and wider Victoria. New employment in the study area will peak at 346 workers in 2028, , with total employment in Victoria due to the Project modelled to peak in the same year at 2,089 workers. Through facilitating connection to the Western Victorian REZ, the Project will create new employment opportunities from renewable energy investment, indirectly contributing to additional employment opportunities in the study area and wider Victoria. Following the construction of the Project, both the study area and rest of Victoria will experience a slow fall back to base case employment by 2032.

A qualitative assessment of the potential impacts of the Project on businesses operating within the study area at an industry-level found:

- A neutral effect for most industries in the study area throughout the Project's construction, operation and decommissioning stages
- Potential highly-localised negative impacts to businesses within 2km of the Project for accommodation and food services, and arts and recreation services industries during construction and operation stages of the Project due to reduced visitation to the area, with a neutral effect during operation at an industry level
- Potential positive impacts on the manufacturing industry in the study area during the construction stage from direct investment in services and materials to facilitate the construction of the Project.

Businesses in the accommodation and food services and arts and recreation services industries within 2km of the Project may be subject to negative impacts from construction noise, traffic and visual amenity impacts, leading to reduced visitation. Impacts to the accommodation and food services and arts and recreation services industries are expected to be highly localised and short-term, varying based on each business' specific characteristics such as proximity to the Project, viewpoints impacted, and operating hours. With the proposed staggered approach to construction, most areas could be affected on average for nine to 22 weeks over a two year period. Overall, business in these industries located within 2km of the Project may experience a net negative economic impact.

The manufacturing industry may experience a net positive impact from Project construction, associated with the procurement of key Project materials, such as concrete and steel. Other industries – including other services, mining, transport and warehousing, retail trade, wholesale trade, administrative and support services and construction industries, along with the accommodation and food services and arts and recreation services businesses located more than 2km from the Project, are likely to continue operating as usual and remain unaffected by construction. Additionally, the Project will develop and implement initiatives to maximise employment opportunities for local communities, First Nations people and vulnerable and disadvantaged groups. These will aim to recruit as many of the required employees as possible for the Project from within local communities, and include a commitment to deliver training and upskilling through apprenticeships, traineeships and cadetships to develop potential opportunities for members of the local community.

A Business Mitigation and Support Strategy for directly affected businesses and a Business Mitigation and Support Strategy for eligible businesses within 2km will be developed and implemented to avoid and minimise impacts on individual businesses that could be affected by the Project. These strategies will include, but are not limited to, measures to avoid and minimise air quality, noise and vibration and traffic impacts on business operations, maintain access for business operations, avoid impacts on business assets or reconfigure, relocate, re-orientate, or re-stablish assets in an agreed location, and provide early and ongoing information and notification about proposed works in proximity to the business.

For further information see **EES Chapter 14: Economic.**

8.8 Agriculture and forestry

Agriculture is the dominant land use along the Proposed Route, with properties used for grazing, broadacre cropping, horticulture, and plantation forestry. The range and value of agricultural products produced by properties varies considerably, with local industries contributing significantly to production in Victoria.

While residual impacts from the occupation of productive farming and forestry land during construction are minor in a regional context and for most individual properties, some individual farming properties or enterprises may experience greater impacts. Residual impacts may also occur due to restrictions to land uses and disruptions to routine activities, and the isolation and redundancy of productive land. The impacts vary across individual properties because different types of construction activities may occur on different properties, and differences in enterprise mix, property size and management practices impacted.

Access under the transmission line will be reinstated once construction and rehabilitation are completed, lowering the impact of isolation and redundancy for grazing enterprises. However, in high value agricultural areas – particularly where irrigation infrastructure is key to the property or enterprise, and impacts are expected to continue during Project operation – an irrigation evaluation may be undertaken. In these cases, adjustments to paddock layout, or purchase of alternative irrigation equipment could significantly reduce production losses. Where feasible, compensation and/or support will be provided to farmers to adjust or replace irrigation systems and paddock layout. It is likely only a small number of agriculture and cropping enterprises are in situations where it is not possible to make sufficient adjustments to irrigation layouts and infrastructure during construction.

An Agriculture and Forestry Business Mitigation and Support Strategy will be developed to guide individual property mitigations. This includes financial compensation for:

- Loss of land for production and foregone income
- Disruption that results in expense or time impositions (including removal of, or detrimental alteration to, farm infrastructure)
- Redundancy of land during construction.

Financial compensation for land title holders where the Project infrastructure is located will be provided either in accordance with a voluntary Option for Easement Agreement or the Land Acquisition and *Compensation Act 1986.* It will continue until agreed standards of rehabilitation have been achieved. Compensation levels will be negotiated between AusNet and the individual farm or land title holder where the Project infrastructure is located, with fair assessments supported by an independent valuer. Under a voluntary Option for Easement Agreement or the legislated process under the *Land Acquisition and Compensation Act 1986.* I and title holders will also be entitled to obtain - and be compensated for - professional advice including agronomic, legal and financial.

The Agriculture and Forestry Business Mitigation and Support Strategy will also identify other practical measures to minimise production impacts, including the impact of isolated or redundant land. This includes but is not limited to, maintaining access for farm operations, water supply for livestock troughs, and all farm infrastructure, or re-establishing these assets to maintain normal farm operations. This plan will also require avoiding irrigation infrastructure and disruption to irrigation operations, or supporting an irrigation evaluation to determine if adjustments are necessary, and providing for reinstatement and rehabilitation of construction areas. Land Liaison Officers will work with landholders to understand their individual needs, allowing for mitigation of impacts associated with restrictions and disruptions to their properties. For example, the strategy will identify practicable situations where construction timelines could be adjusted to avoid or minimise disturbance at critical times such as breeding, lambing and calving, sowing and harvesting – helping farmers optimise production. Any agreed Specific Property Access Requirements (SPAR) would be recorded and maintained throughout both Project construction and operation to avoid or minimise ongoing impacts to the property and its operations.

In addition, an overarching Project PAMP will be implemented to set out the process and procedures to access landholders' property throughout construction, including procedures regarding notification, biosecurity, and baseline assessments of land conditions as a reference point for rehabilitation and reinstatement works following completion of construction. A Project Communications and Stakeholder Engagement Management Plan, supported by the support strategy, the PAMP, and SPAR, will specify that landholders are provided with adequate notice of construction activities, minimising the chance that farmers invest in crops or activities that will not reach the point of financial return before construction starts.

For further information see **EES Chapter 15: Agriculture and forestry**.

8.9 Aviation

The study area contains four Certified Aerodromes, including Melbourne Airport, and ten Uncertified Aerodromes, including Melton Aerodrome, as well as a range of aviation infrastructure and services that use the air space along the Proposed Route to support commercial enterprises, farming operations, education and training, emergency services and recreation. The aviation assessment considered the potential impacts of the Project's construction activities and infrastructure on Certified and Uncertified aerodromes, air navigation and traffic management services, existing transiting air routes and low flying activities, including aerial agricultural spraying and firefighting. Maintaining safe distances from aerodromes and avoiding prescribed airspaces was a key factor in planning the Proposed Route and tower design.

For example, proposed tower heights were reduced around Melton Aerodrome and Melbourne Airport to minimise potential obstacles to pilots. Information about relevant construction activities (use of cranes and helicopters) and the location of Project infrastructure will be provided to the Aeronautical Information Publication and relevant aerodromes to manage the potential risk of obstructing flight paths, including low flying activities.

Due to the Project's proximity to the Uncertified Melton Aerodrome, there is the potential for construction activities involving the use of cranes and helicopters to present additional obstacles and constraints for pilots during take-off or landing, resulting in a moderate residual impact. Melton Aerodrome facilitates ultra-light and light aircraft operations, training, and aircraft maintenance. To minimise and manage impacts on Melton Aerodrome operations, the Project will provide Airservices Australia — the agency responsible for air traffic management and aviation safety — with details of relevant Project plant, equipment and infrastructure. This information will help inform pilots of any Project elements that may pose a hazard to aircraft operations. Prior to construction, the Project will also consult and liaise with the Melton Aerodrome to minimise the extent and duration of impacts to aircraft operations. These requirements will be set out in the Communications and Stakeholder Engagement Management Plan. In operation for all other locations, residual impacts will be minor to none for low flying activities such as aerial agricultural applications, aerial firefighting, and medical and emergency flights. A minor adjustment to flight height will avoid the infrastructure. The location of the infrastructure will be published in the Aeronautical Information Publication issued by Airservices Australia to the aviation community.

For further information see EES Chapter 16: Aviation.

8.10 Greenhouse gas and climate change

Greenhouse gas (GHG) emissions include carbon dioxide (CO2), sulphur hexafluoride (SF6), and methane (CH4) emissions, and are reported in terms of carbon dioxide equivalents (CO2 e). Climate change is a result of the accumulation of heat in the atmosphere and the oceans due to the increased concentration of greenhouse gases in the atmosphere.

The annual Scope 1 (direct) and Scope 2 (indirect) emissions estimated to be generated by the Project are:

- Construction: 55 kilotonnes of CO₂e annually during the construction period, primarily associated with the production of the construction materials such as cement and steel, vegetation clearance and the generation of waste.
- Operation: 27 kilotonnes of CO₂e during the first year of operation primarily associated with electricity consumption at terminal station sites, potential leakage of SF6 from circuit breakers in terminal stations and fuel usage for maintenance and inspection vehicles. There will be a gradual decrease from 2029 onwards over the Project's 80-year life to 0.27 kilotonnes annually, this value reducing over time due to electricity grid decarbonisation.

Scope 3 emissions are other indirect emissions that are not included in Scope 2, and are a direct result of the operations of the organisation but from sources not owned or operated by the Project. As such, Scope 3 emissions have not been included here, and they are not required to be reported on. Scope 3 emissions include embedded emissions in raw materials such as bricks, business travel by air or rail, and haulage and disposal of materials and waste.

As required by the National Greenhouse and Energy Reporting Act 2007 (NGER Act) and documented in the CEMP, AusNet will monitor, and report greenhouse gas emissions produced during construction of the Project. As emissions generated by construction activities will exceed the NGER Scheme reporting threshold - 25 kilotonnes CO₂e per year – the residual impacts were assessed as moderate. However, by facilitating connection to the renewable energy sources into the NEM, the Project will contribute to an overall reduction of emissions across the grid, supporting the Commonwealth Government's net zero by 2050 target, and reducing the residual impact to minor during operation.

Climate change-related natural hazards (e.g., extreme heat, extreme winds and changed rainfall conditions) are projected to be amplified by climate change over the Project's operating life. During the detailed design stage, a climate change risk assessment will be completed. This will help to further understand the potential risks to Project infrastructure from climate hazards, and inform the development of design measures that address priority risks and satisfy performance requirements over the Project's planned operating life under projected climate change. This risk assessment will be updated every five years based on the best available climate change science relating to key climate-related hazards for Project infrastructure.

For further information see EES Chapter 26: Greenhouse gas and EES Chapter 28: Climate change.

8.11 Other impacts

Low or negligible residual impacts are generally those that are temporary, short term, or localised in nature and can be avoided or readily managed with standard mitigation measures. The following technical reports identified low or negligible residual impacts:

- Historical heritage
- Land use and planning
- Electromagnetic fields
- Air quality
- Noise and vibration

- Transport
- Geology and soils
- Contaminated land
- Groundwater
- Surface water.

The transmission line will be visible from historical heritage places, including the parts of the Victorian goldfields which as of 2025 was added to Australia's World Heritage Tentative List. However the visibility of the Project was found not to impact the heritage significance of these places, or visitor's ability to understand the historical setting. Mitigation such as working with Heritage Victoria and local councils to develop and implement site-specific measures to manage potential impacts from physical disturbance, will further avoid and minimise residual impacts.

The residual impacts from the Project will not affect the underlying use of the land for farming, extractive industry, infrastructure, residential properties, open space and conservation. Some temporary residual impacts will primarily occur within the Project Area due to the use of land for construction activities. Plans will be developed and implemented in consultation with landholders to minimise impacts to existing land use during construction and address land access management agreements, specific property access requirements, and ongoing communications with landholders. There will be restrictions to some activities within the easement during operation which will be confirmed through a safety assessment conducted by AusNet.

EMI and EMF residual impacts are primarily avoided through the design of the Project. The Project will be located and built so that emissions are below the defined Project limits. This will be verified at the detailed design stage and in operation. Any further mitigations required to maintain low residual impacts would be identified and implemented.

Impacts on road performance, road condition, and safety due to construction traffic will be mitigated through a combination of measures defined in Project Traffic Management Plans. These plans will include refinements to the proposed construction traffic route, if required to address local road conditions, safety needs and / or requirements of the relevant road authority, heavy vehicle movement restrictions, access points to construction areas, road modifications or upgrades to accommodate construction vehicles, speed restrictions and any other practicable measures to reduce congestion and minimise impacts to vulnerable users (e.g., pedestrians, school areas etc.). Surveys and monitoring of local roads will also be undertaken before, during, and after construction and fed into Traffic Management Plans to maintain road condition and safe use.

Temporary changes to amenity may occur from noise, dust and traffic generated by the construction works for the Project. Noise and air emission will be mitigated or managed by applying well established and industry standard measures. Amenity impacts will be limited to relatively short duration, well controlled and non-harmful.

Residual impacts to geology and soils, groundwater, surface water and from contaminated land will all be managed either by Project design avoiding impacts, or by mitigations to manage any site specific impacts that occur. Management plans would include mitigations such as appropriate storage or handling of fuels and chemicals, on site erosion and sediment controls, and maintaining buffer distances to surface water, water bodies and Groundwater Dependant Ecosystems.

8.12 Decommissioning

The transmission line will be designed for a service life of 80 years. The new 500kV terminal station near Bulgana and other station works will be designed to have a minimum service life of 45 years. The terminal stations will require upgrades or refurbishment to extend their service life and support the ongoing operation of the transmission line.

The Project's technical reports considered potential impacts from decommissioning activities and, in most cases, found that because the activities are similar to those carried out during construction, the impacts are expected to be comparable. Some moderate residual decommissioning impacts may occur for aviation values (through machinery height impacts to the Uncertified Melton Aerodrome), some individual agricultural properties (through interruption of productive land use), amounts of greenhouse gas emissions, and biodiversity values.

Measures developed to comply with EPRs will be applicable for decommissioning, in accordance with the conditions of the time. The potential impacts and relevant mitigation measures would also be managed by a Decommissioning Management Plan developed prior to the start of works, with approval sought under the relevant legislation at the time.

8.13 Cumulative impacts

Cumulative impacts are the combined effect of multiple projects or activities over time. They occur where incremental, successive and combined effects of actions or projects are added to other proposed actions or projects. To assess the potential for cumulative impacts, the technical reports considered relevant future projects that overlap with the Western Renewables Link Project temporally and spatially.

The biodiversity and habitat assessment identified the potential for moderate cumulative impacts on native vegetation (EVCs and scattered trees), two EPBC Act listed TECs, three EPBC Act listed threatened fauna species, and two FFG Act listed TECs. As noted in Section 8.2, this includes consideration of impacts to the entire easement corridor, which is a conservative approach as it assumes vegetation across the entire easement will be impacted. However, as the design is refined, the area of impact within the easement will be reduced. Therefore, cumulative impacts will be further reduced through the application of additional survey information and design refinement to reduce the area of impact.

The Project will contribute to but not significantly increase the cumulative impact on regional Aboriginal cultural heritage. Potential cumulative impacts will be managed through the implementation of CHMPs and measures to manage potential impacts, for both the Project and other relevant future projects. Therefore, the Aboriginal cultural heritage assessment identified the potential for a moderate residual impact.

9 Environmental Management Framework

The Project will be designed, constructed, operated, and maintained by AusNet in accordance with an Environmental Management Framework. It provides a transparent governance framework for the management of environmental effects during construction, operation and decommissioning. The Environmental Management Framework is one component of an overall governance framework developed to enable the Project to meet statutory requirements, protect environmental values and provide stakeholder confidence that approval requirements are being implemented.

The Environmental Management Framework outlines roles and responsibilities for management and monitoring of the Project's environmental performance. It provides a framework for implementing measures to manage environmental performance, including requirements and accountabilities for monitoring, reporting and auditing.

The requirement for an Environmental Management Framework is prescribed in the EES scoping requirements and is a condition of the Incorporated Document proposed as part of the draft planning scheme amendment. Once approved, it will outline management arrangements for the Project, including:

- A summary of key statutory approvals to be obtained and their compliance requirements
- Requirements for community consultation, stakeholder engagement and communications during construction, operation and decommissioning
- Minimum environmental outcomes that must be achieved by the Project as outlined in the EPRs
- Requirements for identification, assessment and management of environmental risks
- Environmental management documentation (including review and approval requirements) as specified by the Incorporated Document, Environmental Management Framework and EPRs to manage environmental risks and impacts through design, construction, operation and decommissioning
- Approaches to evaluating the Principal Contractor's CEMP and other documents in compliance with the Environmental Management Framework and EPRs, including monitoring, auditing and reporting processes
- Processes for assessment and management of changes.

The development of the Environmental Management Framework, including the EPRs, has been informed by the EES technical studies and reflects the requirements of relevant legislation, policies, and guidelines.

Subject to the Minister for Planning's assessment of the EES, the Environmental Management Framework and EPRs will be updated to reflect the recommendations of the Minister. The Ministers assessment of the EES will consider submissions made on the EES, presentations and submission made to the Inquiry and Advisory Committee (IAC) hearing and the IAC report.

10 Next steps

The EES will be on public exhibition for 40 business days for the community to view the documents and make written submissions. The draft PSA will be published with the exhibited EES. Copies of the EES, draft PSA and supporting materials can be downloaded at the Western Renewables Link website: www.westernrenewableslink.com.au

Hard copies of components of the EES and draft PSA, and digital copies of all the documentation can be viewed at:

- State Library: 328 Swanston St, Melbourne Vic 3000 (City of Melbourne)
- Stawell Town Hall: Sloane St, Stawell Vic 3380 (Northern Grampians Shire Council)
- Beaufort Community Resource Centre and Library: 72 Neill St, Beaufort VIC 3373 (Pyrenees Shire Council)
- The Phoenix Building: 25 Armstrong St South, Ballarat VIC 3350 (City of Ballarat)
- Creswick Hub: 68 Albert St, Creswick VIC 3363 (Hepburn Shire Council)
- Daylesford Library: 33 Albert St, Daylesford VIC 3460 (Hepburn Shire Council)
- Ballan Council Office: 15 Stead St, Ballan VIC 3342 (Moorabool Shire Council)
- Lerderderg Library (Bacchus Marsh): 215 Main St, Bacchus Marsh VIC 3340 (Moorabool Shire Council)
- Melton Library and Learning Hub: 31 McKenzie St, Melton VIC 3337 (Melton City Council).

Submissions must be made in writing to Planning Pannels Victoria via the Engage Victoria website and received by the exhibition closing date. All submissions must relate to the information and topics covered in the Western Renewables Link EES and/or draft PSA.

Following public exhibition of the EES, the IAC appointed by the Minister for Planning will consider the EES and public submissions. The IAC will conduct formal public hearings, at which AusNet and people who have made submissions can make presentations. Following the hearings, the IAC will prepare a report for the Minister.

The Minister's assessment makes recommendations about whether the environmental effects of the Project are acceptable, along with specific modifications or further management measures the Minister considers appropriate. In preparing this assessment, the Minister considers relevant information, including the EES documents, public submissions and the report from the Inquiry and Advisory Committee.

If the Minister's assessment concludes that the Project would be acceptable, AusNet will then obtain the necessary statutory approvals required for the Project, as outlined in **EES Chapter 3: Legislative framework and approval requirements**. The relevant decision-makers for the approvals required by the Project would then consider the Minister's assessment.



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