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

REFERRAL FORM

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

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

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

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

In completing a Referral Form, the following should occur:

- Mark relevant boxes by changing the font colour of the 'cross' to black and provide additional information and explanation where requested.
- As a minimum, a brief response should be provided for each item in the Referral Form, with a more detailed response provided where the item is of particular relevance. Cross-references to sections or pages in supporting documents should also be provided. Information need only be provided once in the Referral Form, although relevant cross-referencing should be included.
- Responses should honestly reflect the potential for adverse environmental effects. A Referral will only be accepted for processing once IAU is satisfied that it has been completed appropriately.
- Potentially significant effects should be described in sufficient detail for a reasonable conclusion to be drawn on whether the project could pose a significant risk to environmental assets. Responses should include:
    - a brief description of potential changes or risks to environmental assets resulting from the project;

- available information on the likelihood and significance of such changes;
- the sources and accuracy of this information, and associated uncertainties.

- Any attachments, maps and supporting reports should be provided in a secure folder with the Referral Form.
- A USB copy of all documents will be needed, especially if the size of electronic documents may cause email difficulties. **Individual documents should not exceed 10MB as they will be published on the Department's website.**
- A completed form would normally be between 15 and 30 pages in length. Responses should not be constrained by the size of the text boxes provided. Text boxes should be extended to allow for an appropriate level of detail.
- The form should be completed in MS Word and not handwritten.

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

Postal address	Couriers
Minister for Planning	**Minister for Planning**
PO Box 500	**Level 16, 8 Nicholson Street**
EAST MELBOURNE VIC 8002	**EAST MELBOURNE VIC 3002**

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

PART 1 PROPONENT DETAILS, PROJECT DESCRIPTION & LOCATION

1. Information on proponent and person making referral

Name of Proponent:	RES Australia Pty Ltd
Authorised person for proponent: **Position:** **Postal address:** **Email address:** **Phone number:** **Facsimile number:**	Mike Head Environment Manager Level 6, 165 Walker Street North Sydney, NSW, 2060 Mike.Head@res-group.com 0481 961 543 n/a
Person who prepared Referral: **Position:** **Organisation:** **Postal address:** **Email address:** **Phone number:** **Facsimile number:**	Jenny Luk Partner Environmental Resources Management Australia Pty Ltd Level 8, 501 Swanston Street, Melbourne, Victoria, 3000 Jenny.luk@erm.com 03 9696 8011 n/a
Available industry & environmental expertise: (areas of 'in-house' expertise & consultancy firms engaged for project)	**RES Australia Pty Ltd (RES)** RES is the world's largest independent renewable energy company and is active in onshore and offshore wind, solar, energy storage, green hydrogen, transmission and distribution. As an industry innovator for over 40 years, RES has delivered more than 23 gigawatts (GW) of renewable energy projects across the globe and supports an operational asset portfolio exceeding 12 GW worldwide for a large client base. RES employs over 2,500 employees and is active in 14 countries. In Australia, RES has over 150 employees managing a portfolio of 2.06 GW of renewable assets. This includes some of the largest wind farms in the southern hemisphere; Murra Warra Wind Farm, Dulacca Wind Farm as well as Emerald Solar Park (one of the first solar farms commissioned in Australia). **Environmental Resources Management Australia Pty Ltd (ERM)** ERM is a leading provider of environmental, health and safety, risk, and social consulting services. ERM delivers innovative solutions for their clients, helping them manage their challenges and better understand their impacts on the world around them and how to best avoid, minimise and mitigate impacts so projects are developed in an environmental and socially responsible manner. ERM has over 8000 employees working across 40 offices globally, including over 450 in Australia.

	ERM has a long standing and proven history of successful development and delivery of permits and consents, referrals, environmental approvals, environmental impact assessments and environmental management of major infrastructure projects. This includes the renewable energy sector in offshore and onshore wind farms, solar farms and battery energy storage systems. To support the preparation of this referral, ERM engaged Landform Architects to prepare the preliminary landscape and visual impact assessments.

2. Project – brief outline

Project title: Cannie Wind Farm

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

The proposed Cannie Wind Farm Project (the **Project**) will be located in the north-west region of Victoria, approximately 33 kilometre (**km**) west of Kerang and 25 km south of the Murray River and Victoria-New South Wales border.

The referral area is 82,606 hectares (**ha**) in size, comprising:

- *Wind Farm Area* – of 17,870 ha, which is entirely located within the Gannawarra Local Government Area (**LGA**), and which includes a Battery Energy Storage System (**BESS**).
- *Transmission Corridor Study Area* – of 64,736 ha, which is predominantly located within the Gannawarra LGA and partially within the Loddon and Buloke LGAs, and will accommodate a transmission easement to connect the Wind Farm Area to the future Victoria-NSW Interconnector (**VNI**) West transmission network.

The referral area includes several state government declared roads, including Kerang-Quambatook Road and Dumosa-Quambatook Road (generally running on an east-west alignment) and Boort-Kerang Road and Quambatook-Swan Hill Road (generally running on a north-south alignment). The south-west section of the Transmission Corridor Study Area traverses the Robinvale Railway Line (freight).

The Transmission Corridor Study Area accommodates multiple transmission corridor route options, which are currently under investigation. Upon identification of a preferred transmission corridor route, the development area will be significantly reduced, and the potential disturbance area would be limited to a conservative maximum of 560 ha.

Refer **Figure 1** of **Attachment 1** for the referral area. The AMG coordinates are provided in **Attachment 2.**

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

The Project will accommodate up to 174 wind turbine generators (**WTGs**) in the Wind Farm Area, providing up to 1,300 megawatt (MW) generation capacity and a turbine tip height of 280.5 metres (m). The Wind Farm Area will also include a BESS providing up to 200 MW / 800 megawatt hour (MWh) storage capacity. The Wind Farm Area will connect to the VNI West terminal station that is proposed to be located in Tragowel, being delivered by others, via overhead transmission lines. The transmission easement will be up to 80 m in width and its surrounding vegetation will be maintained for safety clearances.

In addition to the WTG and BESS, the Wind Farm Area will also include the following:

- Operations and Maintenance (**O&M**) building and associated carparking.
- Up to 3 onsite substations.
- Internal access tracks.
- Site entrance(s) and access points.
- Turbine foundations and hardstands.
- Business identification signage.
- Underground cabling including electrical reticulation from wind turbines and BESS power conversion units up to the Project substation(s).
- Overhead transmission lines from the Wind Farm Area to the new VNI West terminal station that is proposed to be located in Tragowel.

Alternative overhead transmission line options will be investigated to connect the Wind Farm to the new VNI West transmission network that could potentially have lesser impact.

The Wind Farm Area is to also include a range of temporary infrastructure, including one meteorological mast, construction offices and compounds, equipment laydown areas and up to two concrete batching plants.

The final design and location of the components of the Project including infrastructure and final technology selection will be subject to further detailed design and assessment.

The Project is targeting construction commencement in 2027 and operations in 2030.

3. Project description

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

The Project objective is to enhance Victorian and National energy needs through the Australian National Electricity Market (**NEM**) by generating up to 1,300 MW of renewable energy, and powering approximately 800,000 Victorian homes a year. The Project also includes a BESS with an anticipated 200 MW / 800 MWh of storage capacity which will help provide greater security in energy supply and may aid the Australian Energy Market Operator (**AEMO**) in the management of the Frequency Control Ancillary Services (**FCAS**) across this part of the NEM.

The Project will contribute to the Victorian Renewable Energy Target of 95% renewable electricity by 2035 and the long-term target of net zero emissions by 2045. It will also support Victoria's 2035 Emissions Reduction Target to reduce Victoria's emissions by 75 – 80% below 2005 levels by 2035.

In addition to strengthening the state's electricity supply and reducing greenhouse gas emissions, the Project will provide local employment opportunities, particularly during the construction phase and through to operation and maintenance phase. The need to service this workforce with accommodation, food and amenities will help provide local economic benefits.

RES is committed to delivering a community benefit scheme prior to the construction of the windfarm. This will provide ongoing funding to support local projects, community groups and organisations over the Project's lifetime. Finalisation of the structure of the benefit scheme remains subject to RES' ongoing engagement with the community.

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

Initial identification of potential development sites for the Project was undertaken by RES' dedicated in-house 'New Sites' team, who are focussed on identifying suitable development areas based on specific criteria, including the consideration of locational factors that maximise

generation of wind energy while minimising impacts on the surrounding environmental, landscape and social values.

The following locational factors were considered when determining the suitability of the Project site:

- Strong & consistent wind resource.
- Site suitability – the predominant land use within the referral area has historically been for agriculture, primarily utilised for cropping and grazing. The land is generally flat and cleared of native vegetation, which supports the suitability of the site to accommodate wind turbines.
- Proximity to the proposed VNI-West infrastructure.
- Access to transport network from surrounding major roads to facilitate construction activities, minimising the use of local roads.
- Ability to implement minimum 1.5 km buffer between wind turbine locations and all dwellings (unless written consent from landowner is obtained for a reduction in this buffer).
- Support from landowners and other stakeholders in developing the Project.

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

Permanent infrastructure

The main permanent components of the Project are described below.

WIND FARM SITE

Wind turbine generators

The wind farm component of the Project will have a maximum generation capacity of 1,300 MW and comprise up to 174 WTGs. An indicative turbine layout plan for the Wind Farm Area is provided in **Figure 3** of **Attachment 1**.

The current design and turbine layout adopts a 'maximum envelope' approach, with consideration of the maximum number of turbines (i.e. 174) that can be accommodated within the Wind Farm Area. The final number and location of WTGs is subject to further investigation and will consider existing environmental values and sensitivities.

Each WTG will comprise a tower, nacelle, hub and blades, as specified in Table 1 below. The final turbine model and specification will be confirmed during detailed design and procurement.

Table 1 WTG specifications

Item	**Maximum specification**
Overall height	Up to 280.5 m above natural ground level
Hub height	Up to 183 m above natural ground level
Rotor swept area/ rotor diameter	Up to 195 m
Cord width	Up to 5 m
Number of turbines	Up to 174

BESS

The BESS will have a capacity of up to 200 MW and store up to 800 MWh of dispatchable energy. The BESS will charge energy from the grid during periods of high supply/low demand, and discharge energy during periods of low supply/high demand, supporting the grid in balancing supply and demand and providing greater reliability. The BESS will also provide additional grid

security services in the form of ancillary frequency and voltage control services. The final connection configuration for the BESS is to be determined subject to further assessment.

The BESS is proposed to be located adjacent to the primary onsite substation within the Wind Farm Area. The final location for the BESS will be determined with consideration of the optimisation of Medium Voltage (**MV**) & High Voltage (**HV**) electrical reticulation and infrastructure and potential areas of inundation following a hydrology and flood assessment.

The entirety of the BESS facility, including associated hardstand and ancillary components, will cover up to 12 ha, while the battery energy storage area specifically is anticipated to cover up to 6 ha. The BESS facility will consist of approximately 320 units of 40 ft battery storage containers (approximate size of 30 square metres per unit) as well as approximately 40 power conversion units of a similar size.

Each power conversion unit holds the inverter, the MV transformer, MV ring main unit, and auxiliary components.

Operations and Maintenance (O&M) Area

The O&M area will generally be up to 150 m x 150 m subject to detailed design, with associated fencing, landscaping and car parking to accommodate up to 15 or more light vehicle spaces.

High Voltage Substations

The Project may require up to three HV substations, with each substation anticipated to be 200 m x 200 m, with associated fencing and landscaping.

Internal access tracks

Access tracks will be required to support ongoing maintenance activities. The access tracks will be approximately 6 m in width (paved width) and constructed along existing farm tracks where possible. The location of and requirement for any new access tracks would be determined in consultation with host landowners and the Country Fire Authority (**CFA**), respectively.

Site entrance(s)

The location of a main site entrance will be determined with consideration of a transport route assessment and environmental constraints. Secondary site entrances may be required and will be identified as part of the detailed design development phase.

Underground cabling

Reticulated underground cabling will be required between the WTGs, BESS and substation(s). Cables will generally be direct-buried, with individual single-circuit trenches up to 2 m in depth and up to 15 m in width.

Overhead transmission lines

Overhead transmission lines may be required internally to support MV reticulation or HV connection between primary and secondary substation(s). Overhead transmission lines will be required to connect the Wind Farm Area substation(s) to the new VNI West terminal station proposed to be located in Tragowel. The transmission corridor easements will generally be between 70 to 80 m in width.

Overhead Transmission Towers

The transmission towers will be double-circuit steel lattice towers varying in height between 60 and 80 m. From the centre of the towers, tower spacing will be between 400 to 600 m. Final tower type, height and span length is yet to be determined and will be subject to minimising impacts to existing farming operations, vegetation, dwellings, and property boundaries and fencing and will comply with the requirements of the *Electricity Safety (General) Regulations 2019.* The transmission towers within the Wind Farm Area will allow for connection between the substations and the Transmission Corridor.

TRANSMISSION CORRIDOR

Transmission (electrical grid) connection

Three transmission corridor route options are currently being investigated to connect the Wind Farm Area to the new terminal station proposed to be located near Tragowel as part of VNI West

or at an alternate location along the proposed VNI West transmission corridor. The selection of the preferred corridor will be informed through consultation with proposed landholders, and with consideration of engineering design and environmental investigations.

The final transmission corridor easement will generally be between 70 to 80 m in width and cleared of trees and any existing structures to facilitate maintenance access in operations.

The three transmission corridor route options being investigated are shown in **Figure 2** of **Attachment 1**, and include:

- **Option A:** Located directly south of the Wind Farm Area and west of Boort-Quambatook Road, and would include a route length of up to 70 km (approximately).
- **Option B:** Located generally south of the Wind Farm Area and east of Boort-Quambatook Road, and would include a route length of up to 40 km (approximately).
- **Option C:** Located generally to the south-east of the Wind Farm Area, and would include a route length of up to 45 km (approximately).

Overhead Transmission Towers

The transmission towers will be double-circuit steel lattice towers varying in height between 60 and 80 m. From the centre of the towers, tower spacing will be between 400 to 600 metres. Final tower height and span length is yet to be determined and will be subject to minimising impacts to existing farming operations, vegetation, dwellings, and property boundaries and fencing and will comply with the requirements of the *Electricity Safety (General) Regulations 2019.*

Temporary infrastructure

The main temporary components of the Project include:

- Construction compound, including site offices, storage and carparking.
- Construction laydown areas.
- Fencing and hoardings.
- Earthworks and bunding.
- Onsite quarry, in the Wind Farm Area only.
- One guyed lattice meteorological mast structure, in the Wind Farm Area only.
- One or more concrete batching plants may be constructed in the Wind Farm Area only. The need for a concrete batching plant will be determined in the design development phase and consider the outcomes of the traffic impact assessment and construction methodology.

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

The Project will require the upgrade of local public roads to support the construction phase. The identification of roads requiring upgrades will be determined as part of a traffic impact assessment in the detailed design development phase, with consultation with the relevant landowners and road management authorities to follow.

Key construction activities:

Construction of the Project is anticipated to commence in Q4 2027 and may be procured in discrete packages. The construction phase is expected to last for 24 - 36 months, with a targeted operational date of Q4 2030.

Construction activities expected to support the delivery of the Project include:

- External road upgrades and local main site entrance establishments to accommodate Oversize Overmass (**OSOM**) vehicles.

- Site establishment works including temporary site fencing and hoarding, site offices, and hardstand and laydown areas.
- Site clearance and levelling
- Constructing and using temporary access roads, diversion roads and vehicle parking areas.
- Construction, protection, modification, removal or relocation of utility services.
- Establishment of environment and traffic controls, including designated 'no-go' zones.
- Removing, and lopping trees and removing vegetation, including native vegetation.
- Earthworks including cutting and spoil removal, and formation of drainage works.
- Deliveries of WTG components.
- Concrete manufacture.
- Constructing and using temporary onsite quarry.
- Potential road upgrades to support increased vehicle loads.
- Displaying construction, directional and business identification signs.
- Construction of MV electrical reticulation from wind turbines and BESS power conversion units up to the Project substation(s) (including trenching and directional drilling for underground cabling, and tower erection for overhead cabling).
- Construction of permanent O&M facilities and offices.
- Constructing internal site access tracks with appropriate drainage (including watercourse crossings with appropriate designs).
- Establishment of civil bench for critical electrical infrastructures, including BESS and all substations and switching stations.
- Establishment of appropriate erosion and sediment control measures across site.
- Reinstatement of temporary construction areas as required.
- Construction of overhead transmission infrastructure.

Key operational activities:

Operation, maintenance and monitoring of the Project includes the following activities:

- Maintenance and remote monitoring of the Project's permanent infrastructure.
- Ongoing maintenance of relevant facilities on-site, predominantly associated with scheduled maintenance events or the ad hoc repair and replacement of equipment, structural components, access tracks, buildings and plant, control systems, connections, and cabling.
- Undertaking relevant administrative tasks.
- Ongoing environmental monitoring and reporting for the Project in accordance with the relevant approval conditions.

The Project is anticipated to have an operational life of 30 years based on current design life.

Key decommissioning activities (if applicable):

At the end of its operational life, the Project will either extend its operational life or be decommissioned. Where the operational life is extended, the process of re-powering the Project will be subject to any relevant planning approval processes and the upgrading of project infrastructure, facilities, and equipment requirements.

Decommissioning activities will adopt a similar method to those utilised in the construction phase of the Project. When decommissioning occurs:

- Key stakeholders and landholders will be consulted.
- All above ground structures not required for the ongoing agricultural use of the land will be removed and the land rehabilitated to ensure it can be returned to agricultural use.

- Access tracks and hardstands not requested by the landowner to be retained will be removed and land rehabilitated and returned to agricultural use.
- Associated below ground infrastructure, including cabling and the WTG foundations, would be appropriately managed to avoid further disturbance and minimise clearing of revegetated areas.
- Rehabilitated areas will be adequately graded to reflect the slope of the surrounding area and to mitigate risks of soil erosion.
- All materials removed will be sorted for reuse and/or recycling where possible or adequately disposed in accordance with local waste policies and regulations in place.

The Project will comply with any relevant requirements for decommissioning as stipulated under any planning approval or subsequent permit or licence that may be required. The decommissioning process will be undertaken in accordance with best practice methods available at the time of decommissioning. The decommissioning process will focus on the principles of repurpose, reuse, and recycling.

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

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

The Project is not part of an element or stage in a larger project; however, the wind farm and the BESS are likely to be procured separately but targeting the same operational date.

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

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

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

Preliminary figures are estimated in the range of $2-3 billion for total capital expenditure.

4. Project alternatives

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

As founding signatories to the Clean Energy Council's 'Best Practice Charter', RES is committed to avoiding and/or minimising impact to areas of environmental and cultural heritage value, to maximise ongoing agricultural use of the land and avoid potential impacts to the surrounding area and local community (as far as practicable).

RES' approach to avoid or minimise potential impacts associated with renewable energy development starts from the initial identification of potential development sites. RES has a dedicated in-house 'New Sites' team who are focussed on identifying suitable development areas based on specific criteria and the use of proprietary software to aid this process. Once a suitable area is identified, RES will narrow the search based on a detailed Phase 1 assessment process. This Phase 1 process is supported by in-house and external technical specialists.

The proposed Wind Farm Area within the broader Cannie region was found to be the most

suitable location relative to comparable sites primarily due to the available wind resource, proximity to a point of connection to the electricity network, good road access, low density of dwellings, predominant land use of grazing and cropping and being within the State Government's Murray River Renewable Energy Zone.

With regards to the Transmission Corridor Study Area, the proponent is currently exploring the preferred transmission route. The selection of the preferred corridor route will be informed through consultation with proposed landholders and consideration of engineering design and environmental investigations. A previous iteration of the Transmission Corridor Study Area included a fourth option to connect the Wind Farm Area north east towards to the proposed VNI West corridor. This was removed following an environmental constraints assessment to avoid potential impacts to areas of high cultural heritage sensitivity and high ecological values associated with the Murray River.

RES will continue to seek to avoid areas of environmental sensitivity as the Project progresses through to the detailed design phase.

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

No further alternatives are being investigated.

5. Proposed exclusions

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

The Project will connect directly to the VNI West project, which will be delivered by others. Works related to the delivery of VNI West does not form part of this referral.

6. Project implementation

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

RES Australia Pty Ltd

Implementation timeframe:

The current proposed timeline for the construction, commissioning and operation of the Project is provided below. This timeline is subject to change and dependant on the timing and outcomes of the approvals processes (including referral outcomes).

Q3 / Q4 2026	Key planning and environmental approvals secured
Q4 2027	Construction commences, with construction period of 24 – 36 month duration
Q4 2030	Commence operation (30 year operational life, with potential for re-deployment)

Proposed staging (if applicable):

The wind farm and BESS components of the Project may be procured separately under discreet construction packages, however both will target the same operational commence date of Q4 2030. Construction of the wind farm is anticipated to require a duration of 24 – 36 months and 23 – 26 months for the BESS.

7. Description of proposed site or area of investigation

Has a preferred site for the project been selected?

☐ No ☒ Yes If no, please describe area for investigation.

If yes, please describe the preferred site in the next items (if practicable).

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

The Project is to be located in the Loddon Mallee region of north-west Victoria, approximately 33 km west of Kerang and 25 km south of the Murray River and the Victoria-New South Wales border (refer to **Figure 1** in **Attachment 1**). The nearest township to the Wind Farm Area is Quambatook, located approximately 9 km southwest, and within the referral area.

The Avoca River traverses the referral area and demarcates the south-eastern boundary of the Wind Farm Area. Additionally, there is one Wetland of National Significance, Kerang Wetland Ramsar Site, located 0.67 km east of the referral area, which comprises various wetland types consisting of 23 named lakes, marshes and swamps varying in depth and salinity.

The referral area includes several state government declared roads within the including Kerang-Quambatook Road, Boort-Kerang Road, Quambatook-Swan Hill Road and Dumosa-Quambatook Road. The south-west section of the Transmission Corridor Study Area traverses the Robinvale Railway Line (freight).

The landscape within the referral area is predominantly flat and characterised by large open paddocks and cropping fields, road reserves and roadside vegetation. Filtering and partial screening of views across the landscape is provided by established trees present in road reserves. Built structures are scarcely distributed through the Project site and its surrounds. These comprise primarily of agricultural infrastructure such as silos, sheds and rural dwellings.

Much of the remnant vegetation is altered and degraded. Small pockets of higher quality native vegetation remain, either existing as remnant woodland and wetland assemblages, mallee-dominant roadside reserves, native grasslands (typically in connection to more remnant areas or existing as solitary reserves and readily identifiable enclosed land parcels), or riparian corridors associated with Back Creek, Avoca River and minor tributaries.

Various parts of the Project site intersect with areas of cultural heritage sensitivity, due to the presence of waterways and several registered cultural heritage places located in proximity to the Avoca River, which meanders through the northern portion of the Transmission Corridor Study Area.

Most of the referral area contains regions where acid sulphate soils have an extremely low or low probability of occurrence with some areas close to existing water bodies having a high probability of acid sulphate soils occurrence.

Site area (if known):

Total referral area: 82,606 ha, comprising:

- Wind Farm Area (including the BESS): 17,870 ha
- Transmission Corridor Study Area: 64,736 ha.

Route length (for linear infrastructure) up to 70 km long **and width** between 70 to 80 m for the easement.

The route length provided above reflects Transmission Study Corridor Option A, which is the option with the longest connecting length from the Wind Farm Area to the VNI West terminal station proposed to be located in Tragowel following the proposed VNI West transmission line corridor. Options B and C present lengths of up to 40 km and 45 km, respectively.

Current land use and development:

The predominant land use is cleared agricultural land utilised for cropping and grazing. Other uses include rural-residential land and public-owned land such as Crown Land, reserves and road corridors. The predominant zoning within the referral area is the Farming Zone (FZ).

The referral area includes the town of Quambatook which comprises of land within the Township Zone (TZ) and various Public Use Zones (PZ). The town includes the Quambatook Airport and the Quambatook Primary School.

There are multiple land parcels in separate ownership within the Wind Farm Area. Along with dwellings of a rural nature, other built form elements include hay and equipment sheds.

Overhead transmission lines are located along roadsides and across paddocks.

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

The Project site is located approximately 33 km west of Kerang and 25 km south of the Murray River and the Victorian-New South Wales border. The Murray Valley Highway is approximately 10 km to the northeast of the referral area.

The land within the referral area is mostly comprised of land in the Farming Zone (FZ), with smaller areas of Public Conservation and Resource Zone (PCRZ). There are a number of waterways and waterbodies located within the referral area, including the Avoca River, Back Creek, Lake Cutler and The Marsh. Swan Hill Lake is an ephemeral lake system located 5 km east of the referral area. Camping, fishing and passive on-water activities are permitted in this area.

The referral area includes several state government declared roads located within the Transport Zone 2 (TRZ2), including Kerang-Quambatook Road, Quambatook-Swan Hill Road, Dumosa-Quambatook Road and Boort-Kerang Road.

The Robinvale Railway Line (freight) and disused Quambatook Railway Station are located in south-west section of the Transmission Corridor Study Area, with the land within the rail reserve zoned in the Transport Zone 1 (TRZ1).

The area within and immediately surrounding the Project site is sparsely populated with townships within proximity (approximately 10 km) of the site including Mystic Park, Quambatook and Lalbert, with each town having a population of less than 250 people.

The largest town within proximity of the site is Kerang, which is located to the east of the proposed wind farm and referral area and has a population of approximately 4,000 people.

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

The Victoria Planning Provisions (Clause 73.03) define a Wind Energy Facility as:

> *Land used to generate electricity by wind force. It includes land used for:*
>
> > *a) any turbine, building or other structure or thing used in or in connection with the generation of electricity by wind force*
> >
> > *b) an anemometer.*
>
> *It does not include turbines principally used to supply electricity for domestic or rural use of the land.*

Under Clause 72.01-1, The Minister for Planning is the responsible authority for matters under Divisions 1, 1A, 2 and 3 of Part 4 of the Act, 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:

- *Energy generation facility with an installed capacity of 1 megawatt or greater.*
- *Utility installation used to:*
  - *Transmit or distribute electricity.*
  - *Store electricity if the installed capacity is 1 megawatt or greater.*

Proposals for wind energy facilities must be assessed against the planning policy framework and other matters specified in Section 60 of the *Planning and Environment Act 1987.*

The use and development of the Wind Farm Area for a Wind Energy Facility is subject to the provisions of the Gannawarra Planning Scheme, and the land within the proposed Transmission Corridor Study Area is subject to the Gannawarra Planning Scheme, the Buloke Planning Scheme and the Loddon Planning Scheme.

State Planning Policy Framework

Key clauses relevant to the referral area include, but are not limited to:

- Clause 12 Environmental and Landscape values, including considerations for the protection of biodiversity and significant environments and landscapes, and native vegetation management.
- Clause 13 Environmental Risks and Amenity, which seeks to ensure best practice environmental management and risk management are adopted to avoid or minimise environmental degradation and hazards. The clause also includes considerations for the management of natural hazards and climate change, erosion and landslip, noise abatement, and bushfire risk.
- Clause 14 Natural Resource Management, which seeks to assist in the conservation and appropriate use of natural resources to support sustainable development and environmental quality. Considerations include the protection of agricultural land, catchment planning and management, and water quality.
- Clause 15 Built Environment, including the relevant considerations for heritage conservation and Aboriginal cultural heritage and post-contact heritage.
- Clause 17 Economic Development, including the relevant considerations for a diversified economy in the Loddon Mallee North region.
- Clause 18 Transport, including the considerations for integrating land uses with transport and car parking.
- Clause 19 Infrastructure, including Clause 19.01 Energy, establishes an objective to promote the provision of renewable energy whilst ensuring that appropriate siting and design considerations are met.

Zones and Overlays

Refer to **Figure 4** (Planning Zones) and **Figure 5** (Planning Overlays) of **Attachment 1**.

The referral area is affected by the following planning controls:

Gannawarra Planning Scheme

- Zones
  - Farming Zone (FZ)
  - Public Park and Recreation Zone (PPRZ)
  - Public Use Zone – Schedule 1 (PUZ1), Schedule 2 (PUZ2) and Schedule 6 (PUZ6)
  - Public Conservation and Resource Zone (PCRZ)
  - Township Zone (TZ)
  - Transport Zone 1 – Schedule 1 (TRZ1)
  - Transport Zone 2 – Schedule 2 (TRZ2).
- Overlays
  - Bushfire Management Overlay (BMO)
  - Environmental Audit Overlay (EAO)
  - Environmental Significance Overlay – Schedule 1 (ESO1), Environmental Significance Overlay – Schedule 2 (ESO2), Environmental Significance Overlay – Schedule 3 (ESO3), Environmental Significance Overlay – Schedule 4 (ESO4)
  - Floodway Overlay (FO)
  - Land Subject to Inundation Overlay (LSIO)
  - Specific Controls Overlay – Schedule 1 (SCO1), Schedule 2 (SCO2)
  - Vegetation Protection Overlay – Schedule 1 (VPO1), Vegetation Protection Overlay – Schedule 2 (VPO2).

Loddon Planning Scheme

- Zones
  - Farming Zone (FZ).
- Overlays
  - Bushfire Management Overlay (BMO)
  - Floodway Overlay (FO)
  - Land Subject to Inundation Overlay (LSIO)
  - Specific Controls Overlay – Schedule 2 (SCO2)
  - Vegetation Protection Overlay – Schedule 1 (VPO1), Vegetation Protection Overlay – Schedule 2 (VPO2).

Buloke Planning Scheme

- Zones
  - Farming Zone (FZ)
- Overlays
  - Floodway Overlay (FO)
  - Land Subject to Inundation Overlay (LSIO).

<u>Particular Provisions</u>

Pending the final design for the Project, permits maybe required to facilitate the Project under the following particular provisions:

- Clause 52.02 Easements, restrictions, and reserves
- Clause 52.02 Signs
- Clause 52.06 Car Parking
- Clause 52.17 Native Vegetation
- Clause 52.29 Land adjacent to the Principal Road Network
- Clause 52.32 Wind Energy Facility.

<u>Incorporated Documents</u>

Gannawarra Planning Scheme

- Hospital Emergency Medical Services - Helicopter Flight Path Protection Areas Incorporated Document, June 2017.
- Goulburn-Murray Water: Connections Project and Water Efficiency Project Incorporated Document, November 2021.

Local government area(s):

- Gannawarra Shire Council
- Buloke Shire Council
- Loddon Shire Council.

8. Existing environment

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

Recent desktop and site assessments undertaken include:

Cannie Wind Farm Area

- Preliminary Ecological Assessment Report (ERM, 2024a) (**Attachment 3**).
- Preliminary Landscape and Visual Impact Assessment (Landform Architects, 2024a) (**Attachment 4**).
- Preliminary Historic Heritage Assessment (ERM, 2024b) (**Attachment 5**).
- Aboriginal Cultural and Historical Heritage Risk Assessment (Andrew Long and Associates, 2023) (**Attachment 6**).

Transmission Corridor Study Area

- Desktop Ecological Assessment Report (ERM, 2024c) (**Attachment 7**).
- Transmission Line Options Review, Landscape and Visual Impact Assessment (Landform Architects, 2024b) (**Attachment 8**).
- Preliminary Desktop Heritage Assessment (ERM, 2024d) (**Attachment 9**).

An overview of the findings of the assessments is summarised below.

<u>Ecological values</u>

Key ecological findings within the referral area includes:

- Patches of native vegetation primarily comprising mallee woodland, grassland and riparian woodland, mostly confined to linear corridors along road reserves and watercourses.
- The Avoca River traverses the referral area and demarcates the south-eastern boundary of the Wind Farm Area. There is also one Wetland of National Significance, the Kerang Wetlands Ramsar Site, located 0.67 km east of the north-eastern edge of the referral area (Transmission Study Corridor Option C), and covering an area of 9,419 ha, which comprises various wetland types consisting of 23 named lakes, marshes and swamps varying in depth and salinity.
- Potential to support numerous flora, fauna and ecological communities listed under the Environmental Protection and Biodiversity (EPBC) Act and/or the Flora and Fauna Guarantee (FFG) Act, and listed migratory species.
- Presence of minor and major waterways, and State listed wetlands, including:

    - Black Creek
    - Avoca Floodway (Tutchewop Plains)
    - Third Marsh (Top Marsh)
    - Second Marsh (Middle Marsh)
    - First Marsh (The Marsh)
    - Lake Bael Bael
    - Lake Cullen
    - Little Lake Charm, Kangaroo Lake & Racecourse Lake.
- An Ecological Assessment and site survey is required to determine:
    - The extent, quality, and biodiversity Conservation Significations of native vegetation
    - Extent of impacts and avoidance and minimisation/mitigation opportunities of these, and associated offsetting obligations.
    - The type, extent, and quality of fauna habitats present
    - Species list of flora and fauna present.
    - The likelihood of occurrence of threatened flora, fauna, and ecological communities.
    - Any further studies required such as targeted surveys for threatened flora, fauna, and ecological communities.

Significant biodiversity areas in proximity to the Referral Area include:

- Avoca River Water Frontage
- Bael Bael Grassland Nature Reserve
- Cullens Lake Wildlife Reserve
- Kerang Wetlands Ramsar Site
- Korrak Korrak Nature Conservation Reserve
- Lake Lalbert Wildlife Reserve
- Leaghur State Park
- Mystic Park Bushland Reserve
- Tragowell Swamp Nature Conservation Reserve
- Tutchewop Wildlife Reserve
- Wandella Nature Conservation Reserve
- Yassom Swamp Flora and Fauna Reserve

Visual and Landscape Values

The Project is proposed on land within a broad-acre rural landscape that has been highly modified for cultivation of cereal crops. Filtering and partial screening of views across the landscape is provided by established trees present in road reserves.

Sensitive landscapes within the referral area include wetland conservation areas, natural reserves and Quambatook township. Other potential sensitive receptors would be located in the nearby townships of Kerang to the east, Quambatook to the south, Lalbert to the west and Swan Hill, Lake Boga and Mystic Park to the north.

Heritage

Cultural Heritage (First Nations)

The Project site is not located within a Registered Aboriginal Party (**RAP**) area. Traditional Owner interests over the referral area include:

- Barapa Land and Water (**Barapa Barapa**).
- Wamba Wemba Land Council Aboriginal (**Wamba Wemba**), who are also Native Title applicants (Claim reference number VID14/2022).
- Wiran Aboriginal Corporation.

With respect to the Native Title claim made by the Wamba Wemba, RES understand that this claim has not been accepted but that the Federal Court may yet make a decision with respect to

this application as of 15 March 2024. We recognise the presence of this claim, which covers approximately 90-100% of the Project site.

The referral area intersects areas of cultural heritage sensitivity, particularly along waterways such as the Avoca River (refer to **Figure 6** in **Attachment 1**). Preliminary assessments completed have identified 95 Victorian Aboriginal Heritage Register (**VAHR**) sites recorded within the referral area. These comprise of scarred trees with small numbers of stone artefact scatters and earth mounds, located within close proximity to the Avoca River.

Historic Heritage

The referral area is considered to have low potential for historic heritage places (built heritage and historical archaeological resources). The referral area contains two Victorian Heritage Inventory (**VHI**) listed sites, the Budgerum Cemetery (H7626-0001) and Budgerum Stock Yards (H7626-0002) (refer to **Figure 7** in **Attachment 1**). These two VHI sites will be avoided entirely from construction activities and siting of infrastructure.

9. Land availability and control

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

☐ No ☒ Yes If yes, please provide details.

The majority of the referral area is located on freehold land, with approximately 2,877 ha (or 3.5 %) of the referral area located on Crown land (see **Figure 8** in **Attachment 1**).

Current land tenure (provide plan, if practicable):

The majority of the referral area is located on freehold land, with some small areas of Crown land, road and rail corridors, and other publicly owned land for utilities, reserves and recreation areas (refer to **Figure 8** and **Figure 9** of **Attachment 1**).

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

Project land requirements will be secured via commercial land lease/licence agreements applied to private freehold land. The agreements will provide for long-term lease and easement arrangements that will extend for the operational life of the wind farm.

Approvals to construct cabling and access tracks over/across existing road reserves will be obtained from the relevant authority as required when the Project layout is finalised. WTGs (including blade overhang) will be kept clear of Crown land and roads.

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

RES will comply with applicable obligations under the *Native Title Act 1993* (Cth) and the *Traditional Owner Settlement Act 2010* (Vic). The structure, nature, and requirement for these obligations remains subject to additional legal assessment and ongoing engagement with First Peoples State Relations (**FPSR**) and Traditional Owners.

Various utility easements may be located within the referral area. The proponent would seek to co-locate Project infrastructure within these areas where possible. This is subject to further

Project investigations, design development and engagement with relevant stakeholders.

10. Required approvals

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

In addition to this referral, the Project will seek the following approvals to facilitate the development and delivery of the Project:

Commonwealth

- Referral under the *Environment Protection and Biodiversity Conservation Act 1999* for a decision as to whether the Project is a 'controlled action'.

State

- Planning permit pursuant to the *Planning and Environment Act 1987* (**P&E Act**)
- Cultural Heritage Management Plan (**CHMP**) pursuant to the *Aboriginal Heritage Act 2006*.

Additional works permits and approvals for the development may also be required under the following legislation:

- Licence pursuant to the *Crown (Land Reserves) Act 1978* where works are required on Crown land.
- Compliance with *Native Title Act 1993 (Cth)* and Future Act Assessment procedure in addition to the *Traditional Owner Settlement Act 2010.*
- Permit or consent under the *Heritage Act 2017* for management of impacts to historic heritage.
- Development licence pursuant to the *Environment Protection Act 2017* for disturbance / removal of contaminated material and soil.
- Permit pursuant to the *Flora and Fauna Guarantee Act 1988* for taking of wildlife and removal of flora species.
- Permit pursuant to the *Water Act 1989* for any works within 20 metres of a designated waterway.
- Consent pursuant to the *Road Management Act 2004* for works within a road reserve.
- Consent pursuant to the *Electricity Safety Act 1998*.
- *Electricity Industry Act 2000* for license to generate, distribute and sell electricity.
- *Land Act 1958* for any works on unreserved Crown land and freehold land.

Have any applications for approval been lodged?

☒ No ☒ Yes If yes, please provide details.

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

- Commonwealth Department of Climate Change, Energy and the Environment and Water (**DCCEEW**), EPBC Act pre-referral meeting held on 29 November 2023
- Department of Transport and Planning (**DTP**) Impact Assessment Unit, EES pre-referral meeting held 16 November 2023.

- Department of Energy, Environment and Climate Action (**DEECA**), Loddon Mallee Region, EES pre-referral meeting held on 8 February 2024
- Gannawarra Shire Council, Project introduction meeting held 8th August 2023 followed by 2 subsequent informal meetings in December 2023 and February 2024.
- Swan Hill Shire Council, Project introduction meeting held 18th December 2023 followed by 1 subsequent meeting on 6th February 2024 providing project briefing to the monthly councillor meeting.
- Barapa Barapa, Project introduction meeting held on 29th November 2023 followed by 1 subsequent meeting including a site visit to witness the meteorological mast soil testing held in January 2024.
- Wamba Wemba, Project introduction meeting held on 14th December 2023 followed by 2 subsequent meetings including 2 site visits to undertake a site walkover for the proposed meteorological mast location for the project in December 2023, while also performing a Welcome to Country ceremony at the location. The second site visit was held in January 2024 to witness soil testing activities undertaken for the proposed meteorological mast.
- Wiran Aboriginal Corporation, project inception meeting held on 28th July 2023, followed by 1 subsequent meeting held in November 2023.

Other agencies consulted:

- Nil

PART 2 POTENTIAL ENVIRONMENTAL EFFECTS

11. Potentially significant environmental effects

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

Early Project design has sought to avoid impacts to known environmental values and sensitivities. It is anticipated that the Project will be able to avoid or mitigate potential significant adverse effects on the environment following detailed technical assessments that will inform the final design and siting of the Project, and by adopting the principles of avoidance, mitigation and offsetting to minimise adverse environmental effects.

The key anticipated and potential effects from the Project are described below.

Native vegetation and threatened flora and fauna

Desktop assessments (refer to **Section 3** of **Attachment 3** and **Section 3** of **Attachment 7**) identified potential remnants of native vegetation representing 15 Ecological Vegetation Classes (EVCs) across the two associated bioregions. Many of these EVCs have a Bioregional Conservation Status of Endangered, including extensive mallee woodland in road reserves. Such vegetation may be impacted by the creation of access roads to fields and paddocks, and by widening of roads to accommodate large vehicles during construction and for delivery of turbines. Small patches requiring clearing have potential to add up to a significant amount of native vegetation loss (i.e. > 10 ha). While the proposed transmission corridor routes all have substantial scope for avoidance of impacts, indirect losses may be required for reduction of bushfire hazards beneath the proposed transmission lines.

While various threatened species and communities are recorded within the referral area, micro-siting of infrastructure may avoid significant loss of habitat.

It is considered unlikely that a significant proportion of a remaining habitat or population of species listed under the FFG Act would experience long-term impacts due to the Project. However, targeted surveys are required to confirm presence of habitat or populations of threatened species, presence of listed communities, and to determine potential impacts.

Upon confirmation of the development footprint at the detailed design phase development, further site utilisation assessment and targeted surveys will be conducted to inform the final design and siting of the Project to allow for the avoidance and mitigation of any significant environmental matters.

Matters of National Environmental Significance (MNES)

The desktop ecological assessments identify potential significant impacts to MNES due to the proposed action based on the MNES Significant Impact Guidelines 1.1 (Department of the Environment, 2013).

The referral area accommodates multiple transmission corridor options which are currently under investigation. Further design development will occur to identify a preferred corridor, and to enable field surveys and detailed impact assessments and identification of avoidance and minimisation opportunities to be completed. Following this refinement, the potential number of species affected, areas of disturbance and associated impacts are expected to be reduced, however there is still potential for significant impacts to MNES. Where impacts cannot be avoided, management measures would be applied and/or Project specific mitigation measures would be developed and applied (where feasible) to reduce these to acceptable levels.

Where effects on threatened species and communities cannot be avoided, best-practice environmental management measures would be detailed in the Project's Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan (OEMP). Specific mitigation measures may be developed to address any residual effects.

A full assessment of threatened species and ecological communities will be detailed in a significant impact assessment as part of an MNES report, once the development footprint is determined.

There are 16 flora species listed as threatened under the EPBC Act that are known to occur in the referral area and therefore may be subject to impacts by the Project:

- River Swap Wallaby-grass (*Amphibromus fluitans*)
- A Spear Grass (*Austrostipa wakoolica*)
- Candy Spider-orchid (*Caladenia versicolor*)
- Matted Flax-lily (*Dianella amoena*)
- Spiny Peppercress (*Lepidium aschersonii*)
- Winged Peppercress (*Lepidium monoplocoides*)
- Veined Peppercress (*Lepidium phlebopetalum*)
- Button Immortelle (*Leptorhynchos waitzia*)
- Soft Sunray (*Leucochrysum molle*)
- Ridged Water-milfoil (*Myriophyllum porcatum*)
- Turnip Copperburr (*Sclerolaena napiformis*)
- Stiff Groundsel (*Senecio behrianus*)
- Slender Darling-pea (*Swainsona murrayana*)
- Red Darling-pea (*Swainsona plagiotropis*)
- Chariot Wheels (*Maireana cheelii*)
- A Spike Sedge (*Eleocharis orbicis*)

There are 30 fauna species listed as threatened under the EPBC Act that are known to occur in the referral area and therefore may be subject to impacts by the Project:Southern Whiteface

- Pink-tailed Worm-lizard
- Ruddy Turnstone
- Australasian Bittern
- Silver Perch
- Sharp-tailed Sandpiper
- Curlew Sandpiper
- Great Knot
- Greater Sand Plover
- Brown Treecreeper (south-eastern)
- Murray Hardyhead
- Striped Legless Lizard
- Grey Falcon
- Flathead Galaxias
- Latham's Snipe
- White-throated Needletail
- Nunivak Bar-tailed Godwit
- Black-tailed Godwit
- Growling Grass Frog
- Pink Cockatoo
- Murray Cod
- Hooded Robin (south-eastern)
- Blue-winged Parrot
- Eastern Curlew
- Plains-wanderer
- Grey Plover
- Regent Parrot (eastern)
- Australian Painted-snipe
- Diamond Firetail
- Common Greenshank

There are 38 listed migratory species that are known to occur in the referral area and therefore may be subject to impacts by the Project:

- Australian Painted-snipe
- Black-tailed Godwit
- Caspian Tern
- Common Greenshank
- Common Sandpiper
- Curlew Sandpiper
- Double-banded Plover
- Eastern Cattle Egret
- Eastern Curlew
- Eastern Great Egret
- Fork-tailed Swift
- Glossy Ibis
- Great Knot
- Greater Sand Plover
- Grey Plover
- Latham's Snipe
- Little Curlew
- Little Stint
- Long-toed Stint
- Marsh Sandpiper
- Nunivak Bar-tailed Godwit
- Oriental Plover
- Pacific Golden Plover
- Pectoral Sandpiper
- Rainbow Bee-eater
- Red-necked Stint
- Reed-Warbler
- Ruddy Turnstone
- Ruff (Reeve)
- Sanderling
- Satin Flycatcher
- Sharp-tailed Sandpiper
- White Wagtail
- White-bellied Sea-Eagle
- White-throated Needletail
- White-winged Black Tern
- Wood Sandpiper
- Yellow Wagtail

Seven EPBC Act-listed Threatened Ecological Communities (TECs) are known to occur within 10 km of the Referral Area:

- Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions.
- Grey Box (Eucalyptus macrocarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia.
- Plains mallee box woodlands of the Murray Darling Depression, Riverina and Naracoorte Coastal Plain Bioregions.
- Mallee Bird Community of the Murray Darling Depression.
- Natural Grasslands of the Murray Valley Plains.
- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains.
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

For threatened fauna, direct impacts are primarily considered likely to result from:

- Collision risk with and/or barrier effects of WTGs.
- Reduction of habitat through removal of native vegetation for access roads and along the transmission corridor.
- Reduction of habitat through clearing and levelling of sites, excavations and general construction activities resulting in direct loss of habitat.

For threatened flora and TECs, impacts are likely to result from:

- Removal for creation of or widening of access roads (direct).
- Reduction in habitat from creation of or widening of access roads (indirect).

While isolated impacts on native vegetation are likely to be small, cumulative impacts are expected to equate to enough to be considered significant and trigger the need for a referral, especially if such vegetation is found to represent a TEC.

Wetlands and watercourses

A review of the DEECA current wetlands registry confirms there are 91 state-listed wetlands, of which 4 are named within the referral area including:

- Lake Murphy
- Lake Lookout
- Sandhill Lake
- Yassom Swamp.

In addition, the Kerang Wetlands, a wetland of international importance, is located 0.67 km east of the north-eastern edge of the referral area (Transmission Study Corridor Option C). The Kerang Wetlands are a mosaic of various wetland types, comprising 23 named lakes, marshes and swamps varying in depth and salinity. It covers an area of 9,419 ha and is located on the lower reaches of the Avoca and Loddon Rivers and the Pyramid Creek near the town of Kerang.

The Project is committed to a minimum setback of 65 m from internal waterway systems, and the WTG and associated project infrastructure will be positioned to ensure that any fauna and flora that depend on the significant waterway would not be significantly impacted.

Hydrogeology

All potential aquatic and terrestrial groundwater dependent ecosystems (**GDEs**) are mapped by the Bureau of Meteorology (**BoM**). Within the referral area:

- 1,821 ha is identified as High Potential GDE.
- 1,154 ha is identified as Moderate Potential GDE.
- 5.28 ha is identified as Low Potential GDE.
- 53 ha is identified as Unclassified Potential GDE.

GDE groups of relevance to the Project consist of terrestrial vegetation including the following:

- Chenopod Grassland.
- Chenopod Mallee.
- Floodplain Riparian Woodland.
- Grassy Riverine Forest/Riverine Swamp Forest Complex.
- Lignum Swamp.
- Lignum Swampy Woodland.
- Lignum Swampy Woodland/Lake Bed Herbland Mosaic.
- Low Rises Woodland.
- Plains Woodland.
- Plains Savannah.
- Riverine Chenopod Woodland.
- Ridged Plains Mallee.

- Riverine Swampy Woodland/Lignum Swamp Mosaic.
- Samphire Shrubland.
- Semi-arid Chenopod Woodland.
- Semi-arid Woodland.
- Woorinen Mallee.

The potential occurrence of GDEs within the referral area will be investigated further as the Project design, location and nature of construction activities are determined.

Landscape and visual

The Project is proposed in a broad-acre rural landscape that has been highly modified through farming, and has low sensitivity to change. Preliminary assessments found that given the distance between existing townships and the proposed Project site, and the existence of vegetation along existing roads that provide filtering and screening effects, the impact on the local landscape from the Project is generally expected to be low. An area of potentially greater viewer sensitivity is associated to the nearby township of Lalbert, located 10 km west of the referral area.

The Murray Valley Highway, located approximately 10 km to the northeast of the referral area, and other local roads could also present areas of greater viewer sensitivity. However, local roads have low usage or viewer numbers, and there are no tourist locations or stopping points on the highways or along the local roads to encourage potential viewers.

The Project will adopt a minimum setback of 1.5 km from all dwellings (unless written consent from landowner is obtained for a reduction in this buffer), which would assist in mitigating visual amenity impacts that may result from the proposal.

Heritage

Aboriginal cultural heritage

Preliminary assessments have identified 95 VAHR sites as being present within the referral area. Of these places, 3 are located within the Wind Farm Area and 92 are located within the Transmission Corridor Study Area. Avoidance of all registered VAHR sites is intended by siting the proposed wind turbines and transmission routes in locations that will not interfere with the VAHR sites. The identified VAHR sites predominantly comprise of scarred trees with small numbers of stone artefact scatters and earth mounds, located within close proximity to the Avoca River.

Preparation and approval of a CHMP in accordance with the *Aboriginal Heritage Act 2006* (VIC) will assist in mitigating the risk of damage and provide for the appropriate management of artefacts as required.

Historic heritage

Preliminary assessment identified two registered historic places within the wider Transmission Corridor Study Area (Budgerum Stock Yards H7626-0002 and Budgerum Cemetery H7626-0001), however, both places are sufficiently distanced and do not intersect with the 80 m wide transmission line easement options that are being considered.

The referral area yields low historical archaeological potential with the exclusion of a historic heritage scatter identified near Hogans Road, Cannie (known as Hogans Road Historic Place (**HRHP**)). Aside from the HRHP site which has moderate to high archaeological potential, the Project has a low likelihood to impact unknown historic heritage (built heritage and historical archaeological resources).

The Project is expected to avoid any recorded historic heritage places and the HRHP site.

Soils

The Commonwealth Scientific and Industrial Research Organisation (**CSIRO**) databases indicate that most of the referral area contains regions where acid sulphate soils (**ASS**) have an extremely

low or low probability of occurrence. Some areas close to existing water bodies having a high probability of ASS occurrence. Detailed assessment of ASS would be undertaken to inform project design and development. The micro-siting of turbines and associated infrastructure will avoid these areas identified as having higher potential for acid sulphate soils.

No Erosion Management Overlays (**EMO**) exist within the referral area. Further assessment will be undertaken to confirm potential effects the Project may have on highly erodible soils.

Health and safety of human community

Potential risks to the health and safety of the human community are expected to be limited. Electromagnetic field (**EMF**), shadow flicker, blade glint and blade throw assessments will be undertaken as the project progresses to confirm any potential effects.

Greenhouse gas emissions

The Project is not anticipated to generate any greenhouse gas emissions. Conversely, the Project will generate electricity which will displace greenhouse emissions from other sources of power. The Project is anticipated to generate clean renewable energy to power approximately 800,000 Victorian homes per year. Minimal amounts of CO_2 emissions would occur temporarily through the use of project vehicles, plant and equipment. The Project is estimated to offset potentially 4 megatonnes of CO_2 per year, a contribution of potentially 65% to the Victorian Renewable Energy Target.

Social

The indicative WTG layout (refer to **Figure 3** of **Attachment 1**) and associated Project infrastructure have been developed with inputs in relation to wind data collected from the Project site.

The Project is not anticipated to result in short or long term displacement of residences or severance of residential access to community resources. Any effects on the transport network from potential road upgrades and temporary diversions would be short term during construction and will be mitigated and managed through implementation of a Traffic Management Plan.

Early consultation and engagement with the community and stakeholders will be undertaken to ensure community representatives will have the opportunity to provide input into the Project.

12. Native vegetation, flora and fauna

Native vegetation

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

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

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

A preliminary ecological site assessment of the Wind Farm Area was undertaken in March 2022 by Ecolink Consulting Pty Ltd (Ecolink) for a previous iteration of the Wind Farm Area. The assessment mapped native vegetation presence in the form of patches and scattered trees. No Vegetation Quality Assessment was undertaken and large trees in patches were not assessed. Since this assessment in 2022, the key modifications to the Project Area include the extension of the Wind Farm Area to the north-east and the west to support an increased number of WTGs.

Desktop assessments have since been conducted by ERM to review these findings, particularly for the identification of native vegetation within the Wind Farm Area, and to scope the biodiversity

constraints to inform the viability of proposed Transmission Corridor Study Area (refer to **Section 3 and 5** of **Attachment 3** and **Section 4 and 6** of **Attachment 7**).

Once the optimal development footprint is confirmed, detailed native vegetation assessment will be completed to determine the presence, condition. and extent of patches of native vegetation, scattered trees, and extent of native vegetation likely to be removed for the Project.

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

☒ NYD Estimated area …….(hectares)

The maximum area of native vegetation proposed to be impacted will be determined as the development footprint is progressed.

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

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

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

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

EVC mapping by DEECA identifies 15 EVCs across two bioregions (Murray Mallee and Victorian Riverina) within the referral area:

- EVC 56 Flood Plain Riparian Woodland listed as a Vulnerable EVC.
- EVC 66 Low Rises Woodland listed as an Endangered EVC.
- EVC 96 Ridged Plains Mallee
  - Murray Mallee listed as an Endangered EVC
  - Victorian Riverina listed as an Endangered EVC
- EVC 97 Semi-arid Woodland – Victorian Riverina listed as an Endangered EVC
- EVC 98 Semi-arid Chenopod Woodland listed as an Endangered EVC.
- EVC 103 Riverine Chenopod Woodland
  - Victorian Riverina listed as a Vulnerable EVC
  - Murray Mallee listed as a Depleted EVC
- EVC 104 Lignum Swamp listed as a Vulnerable EVC.
- EVC 132 Plains Grassland listed as an Endangered EVC.
- EVC 803 Plains Woodland (Murray Mallee) listed as a Least of Concern EVC
- EVC 812 Grassy Riverine Forest/ Riverine Swamp Forest Complex listed as a Depleted EVC.
- EVC 823 Lignum Swampy Woodland – Victorian Riverina listed as a Vulnerable EVC
- EVC 824 Woorinen Mallee
  - Murray Mallee listed as a Vulnerable EVC
  - Victorian Riverina listed as a Vulnerable EVC
- EVC 826 Plains Savannah
  - Victorian Riverina listed as an Endangered EVC
  - Murray Mallee listed as an Endangered EVC
- EVC 829 Chenopod Grassland
  - Victorian Riverina listed as an Endangered EVC
  - Murray Mallee listed as an Endangered EVC
- EVC 946
  - Riverine Swampy Woodland/ Lignum Swamp Mosaic listed as a Vulnerable EVC

This modelling suggests that most remnant vegetation in the Referral area is likely to represent Chenopod Grassland (EVC 829), Woorinen Mallee (EVC 824), Lignum Swampy Woodland (EVC 823) and Floodplain Riparian Woodland (EVC 56).

Have potential vegetation offsets been identified as yet?

☒ NYD ☒ Yes If yes, please briefly describe.

The proponent is committed to avoid and/or mitigate potential significant adverse effects on the environment. Initial mapping of native vegetation within the Wind Farm Area has included a baseline buffer of 30 m to inform design development. The final design and siting of the Project will seek to avoid removal of native vegetation.. Vegetation offsets (as required) will be identified once the development footprint is progressed and detailed vegetation assessments are completed.

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

The list of EVCs occurring in the Referral Area is based on mapping from DEECA. Verification will be undertaken via ground-truthing as part of detailed native vegetation assessment as the development plan progresses.

NYD = not yet determined

Flora and fauna

What investigations of flora and fauna in the project area have been done?

(provide overview here and attach details of method and results of any surveys for the project & describe their accuracy)

A preliminary ecological site assessment of the Wind Farm Area was undertaken in March 2022 by Ecolink Consulting Pty Ltd (Ecolink) for a previous iteration of the Wind Farm Area. The assessment mapped native vegetation presence in the form of patches and scattered trees. No Vegetation Quality Assessment was undertaken and large trees in patches were not assessed. Since this assessment in 2022, the key modifications to the Project Area include the extension of the Wind Farm Area to the north-east and the west to support an increased number of WTGs, and inclusion of the Transmission Corridor Study Area.

The mapping of native vegetation requires fine scale refining, EVC determination and Vegetation Quality Assessment including recording of large trees.

Bird Utilisation Surveys have been conducted by ERM for three seasons (Winter and Spring 2023, Summer 2024), with bat recordings included in two of those assessments.

The remainder of the studies have been desktop assessments of the referral area incorporating the current Wind Farm Area and initial investigation of potential transmission corridor routes.

Assessments to date include:

- Preliminary Ecological Assessment Report of Wind Farm Area (ERM, 2024a) (**Attachment 3**);
- Desktop Ecological Assessment Report of Transmission Corridor Study Area (ERM, 2024c) (**Attachment 7**); and
- Bird Utilisation Surveys completed for Winter 2023, Spring 2023 and Summer 2024 (3 of 8 surveys completed by ERM)

Once the development footprint is progressed, further biodiversity assessments including targeted surveys will be undertaken to inform the final design and siting of the Project.

Flora

Species lists and descriptions of flora within patches of native vegetation, scattered tree, weeds, planted vegetation and other non-native vegetated areas will be recorded during detailed assessments once the development footprint is progressed.

Fauna

Species lists and descriptions of fauna habitat will be recorded during detailed assessments once the development footprint is progressed.

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

☒ NYD ☒ No ☒ Yes If yes, please:

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

The following threatened species, ecological communities and migratory species have been recorded within the Referral Area or within a 10 km buffer.

Flora species

Records exist for 91 flora species listed under the EPBC Act and/or FFG Act exist within 10 km of the Referral Area, as per the table below.

Scientific name	Common name	Listing status
Acacia melvillei	Yarran	Critically Endangered under FFG Act
Acacia oswaldii	Umbrella Wattle	Critically Endangered under FFG Act
Acacia pendula	Weeping Myall	Critically Endangered under FFG Act
Allocasuarina luehmannii	Buloke	Critically Endangered under FFG Act
Ammannia multiflora	Jerry-jerry	Endangered under FFG Act
Amphibromus fluitans	River Swamp Wallaby-grass	Vulnerable under the EPBC Act
Amyema linophylla subsp. orientalis	Buloke Mistletoe	Critically Endangered under FFG Act
Aristida obscura	Rough-seed Wire-grass	Endangered under FFG Act
Asperula gemella	Twin-leaf Bedstraw	Endangered under FFG Act
Austrobryonia micrantha	Mallee Cucumber	Endangered under FFG Act
Austrostipa breviglumis	Cane Spear-grass	Endangered under FFG Act
Austrostipa puberula	Fine-hairy Spear-grass	Endangered under FFG Act
Austrostipa tenuifolia	Long-awn Spear-grass	Endangered under FFG Act
Austrostipa wakoolica	Spear Grass	Endangered under the EPBC Act
Bergia ammannioides	Jerry Water-fire	Endangered under FFG Act
Bergia trimera	Small Water-fire	Endangered under FFG Act
Brachyscome readeri	Reader's Daisy	Endangered under FFG Act
Caladenia tensa	Greencomb Spider-orchid	Endangered under EPBC Act
Caladenia versicolor	Candy Spider-orchid	Vulnerable under the EPBC Act Endangered under FFG Act
Cardamine moirensis	Riverina Bitter-cress	Endangered under FFG Act
Casuarina obesa	Swamp Sheoak	Critically Endangered under FFG Act
Centipeda crateriformis subsp. compacta	Compact Sneezeweed	Endangered under FFG Act

Centipeda crateriformis subsp. crateriformis	Lagoon Sneezeweed	Endangered under FFG Act
Centipeda thespidioides	Desert Sneezeweed	Endangered under FFG Act
Chenopodium desertorum subsp. desertorum	Frosted Goosefoot	Endangered under FFG Act
Chenopodium desertorum subsp. rectum	Frosted Goosefoot	Endangered under FFG Act
Convolvulus graminetinus	Grassland Bindweed	Endangered under FFG Act
Cullen cinereum	Hoary Scurf-pea	Endangered under FFG Act
Cullen tenax	Tough Scurf-pea	Endangered under FFG Act
Cyperus bifax	Downs Nutgrass	Critically Endangered under FFG Act
Cyperus concinnus	Trim Flat-sedge	Critically Endangered under FFG Act
Dianella amoena	Matted Flax-lily	Endangered under EPBC Act Critically Endangered under FFG Act
Dianella porracea	Riverine Flax-lily	Critically Endangered under FFG Act
Dianella tarda	Late-flower Flax-lily	Critically Endangered under FFG Act
Diuris behrii	Golden Cowslips	Endangered under FFG Act
Duma horrida subsp. horrida	Spiny Lignum	Critically Endangered under FFG Act
Elacholoma prostrata	Small Monkey-flower	Endangered under FFG Act
Eleocharis obicis	A Spike-sedge	Vulnerable under EPBC Act
Eleocharis plana	Flat Spike-sedge	Critically Endangered under FFG Act
Eragrostis australasica	Cane Grass	Critically Endangered under FFG Act
Eragrostis lacunaria	Purple Love-grass	Endangered under FFG Act
Eragrostis setifolia	Bristly Love-grass	Endangered under FFG Act
Eriochlamys squamata	Scaly Mantle	Endangered under FFG Act
Eryngium paludosum	Long Eryngium	Endangered under FFG Act
Eucalyptus X oxypoma	Deniliquin Box	Endangered under FFG Act
Goodenia lunata	Stiff Goodenia	Critically Endangered under FFG Act
Grevillea rosmarinifolia subsp. glabella	Smooth Grevillea	Endangered under FFG Act
Lepidium aschersonii	Spiny Peppercress	Vulnerable under the EPBC Act Endangered under FFG Act
Lepidium monoplocoides	Winged Peppercress	Endangered under FFG Act Endangered under EPBC Act
Lepidium phlebopetalum	Veined Peppercress	Endangered under FFG Act Endangered under EPBC Act
Leptorhynchos waitzia	Button Immortelle	Endangered under FFG Act Endangered under EPBC Act
Leucochrysum molle	Soft Sunray	Endangered under FFG Act Endangered under EPBC Act
Maireana cheelii	Chariot Wheels	Endangered under FFG Act Vulnerable under EPBC Act
Maireana georgei	Slit-wing Bluebush	Critically Endangered under FFG Act
Malva preissiana	Coast Hollyhock	Endangered under FFG Act
Minuria cunninghamii	Bush Minuria	Vulnerable under FFG Act
Minuria integerrima	Smooth Minuria	Vulnerable under FFG Act
Myoporum montanum	Waterbush	Endangered under FFG Act
Myriophyllum porcatum	Ridged Water-milfoil	Vulnerable under the EPBC Act Critically Endangered under FFG Act
Nicotiana goodspeedii	Small-flower Tobacco	Endangered under FFG Act
Nymphoides crenata	Wavy Marshwort	Endangered under FFG Act
Panicum laevinode	Pepper Grass	Vulnerable under FFG Act
Pomaderris paniculosa subsp. paniculosa	Inland Pomaderris	Endangered under FFG Act
Ptilotus erubescens	Hairy Tails	Critically Endangered under FFG Act

Ranunculus undosus	Swamp Buttercup	Endangered under FFG Act
Rhagodia parabolica	Fragrant Saltbush	Vulnerable under FFG Act
Schoenoplectiella dissachantha	Blunt Club-sedge	Critically Endangered under FFG Act
Sarcozona praecox	Sarcozona	Endangered under FFG Act
Sclerolaena lanicuspis	Woolly Copperburr	Endangered under FFG Act
Sclerolaena napiformis	Turnip Copperburr	Critically Endangered under FFG Act Endangered under EPBC Act
Sclerolaena patenticuspis	Spear-fruit Copperburr	Vulnerable under FFG Act
Senecio behrianus	Stiff Groundsel	Endangered under the EPBC Act Critically Endangered under the FFG Act
Senecio campylocarpus	Floodplain Fireweed	Endangered under FFG Act
Senecio cunninghamii var. cunninghamii	Branching Groundsel	Endangered under FFG Act
Senecio longicollaris	Riverina Fireweed	Endangered under FFG Act
Senecio productus subsp. productus	Riverina Groundsel	Endangered under FFG Act
Sida intricata	Twiggy Sida	Endangered under FFG Act
Sida fibulifera	Pin Sida	Endangered under FFG Act
Sporobolus caroli	Yakka Grass	Endangered under FFG Act
Swainsona murrayana	Slender Darling-pea	Vulnerable under the EPBC Act Endangered under FFG Act
Swainsona plagiotropis	Red Darling-pea	Vulnerable under the EPBC Act Endangered under FFG Act
Swainsona pyrophila	Yellow Swainson-pea	Vulnerable under the FFG Act
Swainsona swainsonioides	Downy Swainson-pea	Endangered under FFG Act
Tecticornia pergranulata subsp. divaricata	Blackseed Glasswort	Endangered under FFG Act
Tecticornia syncarpa	Fused Glasswort	Endangered under FFG Act
Templetonia egena	Round Templetonia	Endangered under FFG Act
Triglochin hexagona	Six-point Arrowgrass	Endangered under FFG Act
Trigonella suavissima	Sweet Fenugreek	Endangered under FFG Act
Vittadinia condyloides	Club-hair New Holland Daisy	Endangered under FFG Act
Vittadinia cuneata var. hirsuta	Fuzzy New Holland Daisy	Endangered under FFG Act
Vittadinia pterochaeta	Winged New Holland Daisy	Endangered under FFG Act

Ecological communities

Five ecological communities listed under the FFG Act have been identified as potentially occurring within the 10 km of the referral area:

- Semi-arid Shrubby Pine-Buloke Woodland Community.
- Semi-arid North-West Plains Buloke Grassy Woodland.
- Semi-arid Herbaceous Pine Woodland Community.
- Semi-arid Herbaceous Pine-Buloke Woodland Community.
- Victorian Mallee Bird Community.

Seven EPBC Act listed TECs are known to occur within 10 km of the Referral Area:

- Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions.
- Grey Box (Eucalyptus macrocarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia.
- Plains mallee box woodlands of the Murray Darling Depression, Riverina and Naracoorte Coastal Plain Bioregions.
- Mallee Bird Community of the Murray Darling Depression.

- Natural Grasslands of the Murray Valley Plains.
- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains.
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

Fauna species

There are 72 threatened fauna species listed under the EPBC Act and/or the FFG Act that have records within 10 km of the referral area, as listed below.

Scientific name	Common name	Listing status
Actitis hypoleucos	Common Sandpiper	Vulnerable under FFG Act
Anseranas semipalmata	Magpie Goose	Vulnerable under FFG Act
Antigone rubicunda	Brolga	Endangered under FFG Act
Aphelocephala leucopsis	Southern Whiteface	Vulnerable under EPBC Act
Aprasia parapulchella	Pink-tailed Worm-lizard	Endangered under FFG Act Vulnerable under EPBC Act
Ardea alba modesta	Eastern Great Egret	Vulnerable under FFG Act
Ardea intermedia plumifera	Plumed Egret	Critically Endangered under FFG Act
Ardeotis australis	Australian Bustard	Critically Endangered under FFG Act
Arenaria interpres	Ruddy Turnstone	Endangered under FFG Act Vulnerable under EPBC Act
Aythya australis	Hardhead	Vulnerable under FFG Act
Botaurus poiciloptilus	Australasian Bittern	Critically Endangered under FFG Act Endangered under EPBC Act
Bidyanus bidyanus	Silver Perch	Endangered under FFG Act Critically Endangered under EPBC Act
Biziura lobata	Musk Duck	Vulnerable under FFG Act
Burhinus grallarius	Bush Stone-curlew	Critically Endangered under FFG Act
Calidris acuminata	Sharp-tailed Sandpiper	Vulnerable under EPBC Act
Calidris ferruginea	Curlew Sandpiper	Critically Endangered under FFG Act Critically Endangered under EPBC Act
Calidris tenuirostris	Great Knot	Critically Endangered under FFG Act Critically Endangered under EPBC Act
Charadrius leschenaultii	Greater Sand Plover	Vulnerable under FFG Act Vulnerable under EPBC Act
Chelodina expansa	Broad-shelled Turtle	Endangered under FFG Act
Climacteris picumnus victoriae	Brown Treecreeper (south-eastern)	Vulnerable under EPBC Act
Craterocephalus fluviatilis	Murray Hardyhead	Critically Endangered under FFG Act Endangered under EPBC Act
Delma impar	Striped Legless Lizard	Endangered under FFG Act Vulnerable under EPBC Act
Egretta garzetta	Little Egret	Endangered under FFG Act
Emydura macquarii	Murray River Turtle	Critically Endangered under FFG Act
Falco hypoleucos	Grey Falcon	Vulnerable under FFG Act Vulnerable under EPBC Act
Falco subniger	Black Falcon	Critically Endangered under FFG Act
Galaxias rostratus	Flathead Galaxias	Vulnerable under FFG Act Critically Endangered under EPBC Act
Gallinago hardwickii	Latham's Snipe	Vulnerable under EPBC Act
Gelochelidon macrotarsa	Australian Gull-billed Tern	Endangered under FFG Act
Geopelia cuneata	Diamond Dove	Vulnerable under FFG Act
Haliaeetus leucogaster	White-bellied Sea-Eagle	Endangered under FFG Act
Hirundapus caudacutus	White-throated Needletail	Vulnerable under FFG Act Vulnerable under EPBC Act

Hieraaetus morphnoides	Little Eagle	Vulnerable under FFG Act
Hydroprogne caspia	Caspian Tern	Vulnerable under FFG Act
Ixobrychus dubius	Australian Little Bittern	Endangered under FFG Act
Limosa lapponica baueri	Nunivak Bar-tailed Godwit	Vulnerable under FFG Act Vulnerable under EPBC Act
Limosa limosa	Black-tailed Godwit	Critically Endangered under FFG Act Endangered under EPBC Act
Litoria raniformis	Growling Grass Frog	Vulnerable under FFG Act Vulnerable under EPBC Act
Lophochroa leadbeateri	Pink Cockatoo	Critically Endangered under FFG Act Endangered under EPBC Act
Lophoictinia isura	Square-tailed Kite	Vulnerable under FFG Act
Maccullochella peelii	Murray Cod	Endangered under FFG Act Vulnerable under EPBC Act
Melanodryas cucullate cucullata	Hooded Robin (south-eastern)	Vulnerable under FFG Act Endangered under EPBC Act
Morelia spilota metcalfei	Carpet Python	Endangered under FFG Act
Morethia adelaidensis	Samphire Skink	Endangered under FFG Act
Motacilla flava	Yellow Wagtail	Endangered under FFG Act
Myiagra cyanoleuca	Satin Flycatcher	Endangered under FFG Act
Neophema chrysostoma	Blue-winged Parrot	Vulnerable under EPBC Act
Ninox connivens	Barking Owl	Critically Endangered under FFG Act
Numenius madagascariensis	Eastern Curlew	Critically Endangered under FFG Act Critically Endangered under EPBC Act
Oxyura australis	Blue-billed Duck	Vulnerable under FFG Act
Pedionomus torquatus	Plains-wanderer	Critically Endangered under FFG Act Critically Endangered under EPBC Act
Peltohyas australis	Inland Dotterel	Vulnerable under FFG Act
Pluvialis fulva	Pacific Golden Plover	Vulnerable under FFG Act
Pluvialis squatarola	Grey Plover	Vulnerable under FFG Act Vulnerable under EPBC Act
Pogona barbata	Bearded Dragon	Vulnerable under FFG Act
Polytelis anthopeplus monarchoides	Regent Parrot (eastern)	Vulnerable under FFG Act Vulnerable under EPBC Act
Pomatostomus temporalis	Grey-crowned Babbler	Vulnerable under FFG Act
Pygopus schraderi	Hooded Scaly-foot	Critically Endangered under FFG Act
Rostratula australis	Australian Painted-snipe	Critically Endangered under FFG Act Endangered under EPBC Act
Pseudophryne bibronii	Brown Toadlet	Endangered under FFG Act
Pygopus schraderi	Hooded Scaly-foot	Critically Endangered under FFG Act
Sminthopsis crassicaudata	Fat-tailed Dunnart	Vulnerable under FFG Act
Spatula rhynchotis	Australasian Shoveler	Vulnerable under FFG Act
Stagonopleura guttata	Diamond Firetail	Vulnerable under FFG Act Vulnerable under EPBC Act
Stictonetta naevosa	Freckled Duck	Endangered under FFG Act
Tandanus tandanus	Freshwater Catfish	Endangered under FFG Act
Temognatha flavocincta	Jewel Beetle	Vulnerable under FFG Act
Tringa glareola	Wood Sandpiper	Endangered under FFG Act
Tringa nebularia	Common Greenshank	Endangered under FFG Act Vulnerable under EPBC Act
Tringa stagnatilis	Marsh Sandpiper	Endangered under FFG Act
Turnix pyrrhothorax	Red-chested Button-quail	Endangered under FFG Act
Varanus varius	Lace Monitor	Endangered under FFG Act

Migratory species

The following 38 listed migratory species have records in the referral area.

Scientific name	Common name
Acrocephalus australis	Reed-Warbler
Actitis hypoleucos	Common Sandpiper
Apus pacificus	Fork-tailed Swift
Ardea alba modesta	Eastern Great Egret
Arenaria interpres	Ruddy Turnstone
Bubulcus coromandus	Eastern Cattle Egret
Calidris acuminata	Sharp-tailed Sandpiper
Calidris ferruginea	Curlew Sandpiper
Calidris melanotos	Pectoral Sandpiper
Calidris alba	Sanderling
Calidris minuta	Little Stint
Calidris tenuirostris	Great Knot
Calidris ruficollis	Red-necked Stint
Calidris subminuta	Long-toed Stint
Charadrius bicinctus	Double-banded Plover
Charadrius veredus	Oriental Plover
Charadrius leschenaultii	Greater Sand Plover
Chlidonias leucopterus	White-winged Black Tern
Gallinago hardwickii	Latham's Snipe
Haliaeetus leucogaster	White-bellied Sea-Eagle
Hirundapus caudacutus	White-throated Needletail
Hydroprogne caspia	Caspian Tern
Limosa lapponica baueri	Nunivak Bar-tailed Godwit
Limosa limosa	Black-tailed Godwit
Merops ornatus	Rainbow Bee-eater
Motacilla alba	White Wagtail
Motacilla flava	Yellow Wagtail
Myiagra cyanoleuca	Satin Flycatcher
Numenius madagascariensis	Eastern Curlew
Numenius minutus	Little Curlew
Plegadis falcinellus	Glossy Ibis
Pluvialis fulva	Pacific Golden Plover
Pluvialis squatarola	Grey Plover
Rostratula australis	Australian Painted-snipe
Philomachus pugnax	Ruff (Reeve)
Tringa glareola	Wood Sandpiper
Tringa nebularia	Common Greenshank
Tringa stagnatilis	Marsh Sandpiper

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

Potential threatening processes affecting these species or communities that may be exacerbated by the Project include:

- Clearing and levelling of sites, excavations and general construction activities may result in direct loss of habitat and/species, fragmentation of habitats and communities however the Project will seek to avoid and minimise such impacts through further design refinements. Much of the Project site is currently used for broadacre cropping and

grazing and the Proponent is working to avoid impact on areas of native vegetation as much as feasibly possible.

- Night lighting, noise and vibration associated with construction and operational activities may result in disturbance to fauna habitat and/or direct loss of fauna species. The Project will seek to avoid and minimise such impacts through further design refinements. Additionally, nighttime construction works are a rare occurrence on a wind farm project, with working hours typically being between 7.00am and 7.00pm.
- Accidental spills, erosion and sedimentation, and dust pollution due to construction activities, and affecting both water and/or soil environments may cause a decline in water quality and quality of soils, resulting in the long-term decline or loss over time of species numbers and native vegetation area. However, these will be avoided or mitigated through a number of measures including implementation of speed limits, dust suppression, appropriate bunding and re-fuelling protocols, construction of culverts and other drainage features to manage stormwater flows and prevent erosion damage. These will be detailed in the environmental management plans for the construction and operation of the Project.
- Vehicular movements during construction and operations introduces and/or spreads weeds, pest species or pathogens, may result in long-term decline or loss over time of species numbers and native vegetation area. During construction, site vehicles will not be permitted access to land other than the Project footprint thus reducing the possibility of weed and pathogen incursions. Measures for control with be detailed in a CEMP.
- Potential disturbance or collision risk from WTGS. Whilst some impact is unavoidable, the Proponent is working on configuring the turbine layout to reduce the risk of disturbance and collision. The final turbine layout will consider appropriate spacing of turbines and setbacks from areas of native trees and permanent water bodies including the Avoca River.

Of the key threatening processes identified under the EPBC Act, the Project has the potential to contribute to the following two:

- *Novel biota and their impact on biodiversity* – introduction of weeds to the site, or spread of existing ones within, can be mitigated by the implementation of a Weed Management Plan.
- *Land clearance* – the Project is likely to result in clearance of native vegetation that may currently support listed species or ecological communities. Targeted surveys will be conducted to determine the presence and extent of any listed matters within the site, and such will be used to inform the Project design and development footprint, avoiding or reducing the impact to listed matters through land clearing. Any unavoidable impacts will be appropriately offset.

With the introduction of best practice management and mitigation measures, impacts are likely to be reduced. Where effects on threatened species and communities cannot be avoided, best practice environmental management measures in both construction and operations would be detailed in the Project's construction and operational environmental management plans.

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

☒ NYD ☐ No ☐ Yes If yes, please:

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

Further ecological assessment is required to determine the potential for the above 197 listed species and ecological communities to be present in the development footprint, and to determine

potential impacts from the Project. Additional species may need consideration if the Project site is found to support habitat conducive to their presence. Collision Risk Modelling will be conducted for assessment of potential impacts to listed avifauna and bats, and an adaptive bird and bat management plan will be developed to align with Project approvals.

The final design and siting of the Project will avoid effects to ecological values as much as feasibly possible through further micro siting of impacting infrastructure and activities, and the development of suitable mitigation measures.

The Project is therefore not expected to significantly impact any listed species or communities.

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

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

The final design and development will be revised to reduce effects on indigenous flora and fauna by the Project. The Project will seek to avoid and reduce the potential for such impacts through further surveys to inform responsive final designs. In addition to this, detailed mitigation measures will also include environmental management plans for the construction and operation of the Project.

Where avoidance of an impact is not possible, impacts may be minimised by redesign and/or relocation of infrastructure or low-impact construction methods. Such measures may include:

- Siting of infrastructure in areas that have already been cleared or on the edges of vegetation patches to reduce fragmentation.
- Micro-siting the location of access tracks and other infrastructure or reconfiguring infrastructure based on the results of pre-clearance flora and fauna surveys.
- Upgrading existing farm tracks for construction traffic to minimise the amount of vegetation requiring removal and reducing fragmentation (compared with clearing required for new tracks).
- Prevention of impacts to wetlands by avoiding undertaking of construction and mobilisation activities during sensitive periods such as wet weather events.
- Demarcation of clearing boundaries and designation of areas outside clearing boundaries as “no go” zones to avoid accidental damage to adjacent vegetation.
- Pre-clear surveys to identify habitat features before clearing commences and allow development of an appropriate tree removal procedure if required.
- Developing a traffic management plan to minimise damage to ecologically sensitive areas and injury/mortality of fauna.
- Avoiding activities during foraging or breeding seasons of threatened fauna where possible.
- Develop a Bird and Bat Management Plan to allow for adaptive management practices to be applied.
- Where possible micro-site WTGs to maximise separation from the edges of remnant vegetation.

After impacts have been avoided and minimised as far as practicable, remaining impacts will be mitigated. Mitigative measures may include:

- Rehabilitating disturbed areas following completion of construction activities such as temporary WTG construction pads, laydown areas and other infrastructure (site office, substations) or removal of temporary infrastructure.
- Protection and potential restoration of any vegetation corridors that may facilitate the long-term survival and dispersal of the threatened flora and fauna species identified in assessments.
- Development of appropriate environmental management procedures in a construction environmental management plan (e.g. erosion and sediment control, dust suppression, weed and pest animal management, offsite rubbish disposal).
- Develop a Vegetation, Fauna, and Bird and Bat Management Plan to obtain any additional fauna utilisation information to allow for adaptive management practices to be applied.

- An adaptive management and monitoring program to assess the effectiveness and implementation of controls as required.

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

The field and desktop assessments provide an overview of the biodiversity values that exist, or have the potential to, within the referral area. The absence of a species from a database list or observational studies does not confirm its absence within the Project site or the broader referral area and may instead indicate a low historic sampling effort in the region.

The listed species and ecological communities addressed in this referral encompasses those from a currently broad scope, with assumption of presence until sufficient evidence is acquired to demonstrate confident determination of the contrary.

Additional surveys, performed by experienced ecologists and in accordance with relevant survey guidelines, are required to ground-truth the desktop results and refine and quantify the initial vegetation mapping.

13. Water environments

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

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

A water supply is required for the 24 – 36 months of construction period, primarily for dust suppression and concrete production.

Operational water requirements for the wind farm will be minimal, limited to servicing the operation and maintenance office and ablution facilities on site.

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

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

Construction hardstands have the potential to increase occurrence of runoff. To assist with this, construction areas including access tracks will be formed by crushed rock and be permeable.

All construction, operational and decommissioning facilities will retain wastewater for appropriate disposal off-site, or reuse where possible, subject to meeting quality standards and relevant approvals. An overarching CEMP and an OEMP would be prepared to include management procedures for handling wastewater and runoff.

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

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

There are mapped seasonal and permanent waterways, waterbodies, and wetlands within the referral area (refer **Figure 9** of **Attachment 1**).

Significant aquatic environments within the Wind Farm Area include:

- Avoca River as the major river along the south-eastern boundary of the Wind Farm Area.
- Korrak Korrak Bushland Reserve and wetland in the north of the Wind Farm Area.

Significant aquatic environments within the Transmission Corridor Study Area (refer to **Figure 9**, **Attachment 1**) include:

Option A

- Bael Bael Grassland Nature Conservation Reserve and associated wetland in the north
- Lake Lookout Bushland Reserve and associated wetland
- Sandhill Lake Bushland Reserve and associated wetland
- Lake Murphy Wildlife Reserve and associated wetland.

Option B

- Lake Gilmour Wildlife Reserve and associated wetland
- Quambatook 1204 Bushland Reserve and associated wetland.

Option C

- Cannie Nature Conservation Reserve
- Quambatook Bushland Reserve and associated wetland
- Griffith Lagoon Nature Conservation Reserve
- Mosquito Creek Streamside Reserve.

The Project design will seek to avoid mapped seasonal and permanent waterways, waterbodies, and wetlands within the referral area, including applying 65 m setbacks from the banks of any waterways and waterbodies where possible. Exceptions may exist where transmission line crossings cannot locate an alternate route. Where this is the case, no infrastructure will be placed within water bodies. Access track and cable crossings may be required across waterways however, the Project isn't anticipated to have a significant impact on these as a result. Any waterway crossings will be designed in accordance with industry standards and a Works on Waterway permit will be sought for approval of these works prior to construction.

During construction, there may be some activities that will result in collected runoff requiring discharge (e.g., trenching and excavations, water spraying for dust mitigation). These potential effects are limited to the construction period. It is also expected that any effects will be able to be suitably managed with standard construction measures, which would likely include collection and treatment prior to discharge.

Stormwater runoff from disturbed areas during Project construction will be managed using standard practices for erosion and sediment control on construction sites. Environmental management plans prepared for the Project and implemented during construction and operations will include specific measures to minimise erosion and sedimentation.

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

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

Many of the water environments within and surrounding the referral area are likely to support threatened and / or migratory species.

The Kerang Wetlands are known to support a high diversity and abundance of avifauna, especially waterbirds. This includes 25 species that are threatened in Victoria and 21 species listed under international bilateral agreements for migratory bird species.

Assessment of aquatic environments for fauna habitat will be undertaken during detailed assessments once the development footprint is progressed.

Are any potentially affected wetlands listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'?

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

There is one Wetland of National Significance, Kerang Wetland Ramsar Site located 0.67 km east of the north-eastern edge of the referral area (Transmission Study Corridor Option C).The Kerang Wetlands are a mosaic of various wetland types, comprising 23 named lakes, marshes and swamps varying in depth and salinity.

Major wetlands listed on the Directory of Important Wetlands in Australia located within 10 km of the referral area including:

- Avoca Floodway (Tutchewop Plains)
- Third Marsh (Top Marsh)
- Second Marsh (Middle Marsh)
- First Marsh (The Marsh)
- Lake Bael Bael
- Lake Cullen
- Little Lake Charm, Kangaroo Lake & Racecourse Lake.

The final Project design will seek to avoid water environments through setbacks and buffers, though some cabling crossings of waterways may be required. No direct impacts to the Kerang Ramsar site or other important wetlands are expected from the construction or operation of the Project. Additional assessment of such will be undertaken as the Project design progresses.

Could the project affect streamflows?

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

The Project is unlikely to generate significant run off or alter stream flows. Infrastructure will be permeable where engineer requirements allow and are designed to not significantly alter surface water flows. Further, a 65 m setback will be applied to the banks of waterways.

Any works during construction around or near stream flows will be shallow and temporary. Any potential impacts to stream flows would be appropriately managed through standard mitigation measures and procedures detailed in the Project's CEMP.

Could regional groundwater resources be affected by the project?

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

Visualising Victoria's Groundwater data maps the depths to groundwater across the Project site as ranging from 7.92 to 206 m below ground level. The deepest groundwater with depths of 140 and 206 m are located in the southwest section of the Wind Farm Area.

Further assessments will confirm locations of existing groundwater resources and to develop design measures to avoid any such resources (as required). As the Project design progresses, consideration will be given to the depths of groundwater resources across the Wind Farm Area when designing turbine foundations.

Any potential impacts to encountered groundwater would be localised and appropriately managed through standard mitigation measures and procedures detailed in the Project's CEMP.

Could environmental values (beneficial uses) of water environments be affected?

☒ NYD ☐ No ☐ Yes If yes, identify waterways/water bodies and beneficial uses (as recognised by State Environment Protection Policies)

The Project is unlikely to have long-term adverse impacts on environmental values (beneficial uses) of water environments, as defined in the Environment Reference Standard (**ERS**) under the *Environment Protection Act 2017*.

Albeit unlikely, accidental spills, erosion and sedimentation due to construction activities, may cause a decline in water quality. The Project will identify the potential impacts, if any, and suitable mitigation measures to include the Project's CEMP and OEMP as the Project design progresses

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

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

No estuarine or marine ecosystems are likely to be affected by the Project. While other aquatic environments have potential to be impacted, it is considered unlikely that any effects on ecosystem function or health will result.

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

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

There is potential for localised impacts on the water environments noted in the above section within the referral area, however, where avoidance is not feasible, any impacts are unlikely to be significant and can be appropriately managed through standard mitigation measures and procedures detailed in the Project's CEMP.

Is mitigation of potential effects on water environments proposed?

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

Mitigation measures such as selective siting, applying a minimum setback of 65 m from water environments, water quality monitoring, erosion monitoring, sediment control and bunding/spill management measures will all be implemented via a CEMP.

Additional assessments including a hydrology and flood assessment will be undertaken to support the Project design development phase in avoiding and minimising potential impact on aquatic environments.

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

N/A

14. Landscape and soils

Landscape

Has a preliminary landscape assessment been prepared?

☐ No ☒ Yes If yes, please attach.

The preliminary landscape assessments prepared to date include:

- Preliminary Landscape and Visual Impact Assessment for Cannie Wind Farm (Landform Architects, 2024a) (**Attachment 4**).
- Transmission Line Options Review, Landscape and Visual Impact Assessment (Landform Architects, 2024b) (**Attachment 8**).

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

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

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

The referral area encompasses land covered by the Environmental Significance Overlay (ESO) of the relevant planning provisions. Specifically, the relevant local provisions of the Gannawarra Planning Scheme relevant to the site are:

- ESO1 – Waterway Environs
- ESO2 – High Protection Environs
- ESO3 – Lake Environs
- ESO4 – Areas of Poor Drainage or Potentially Subject to Inundation

Refer to **Figure 5** of **Attachment 1**.

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

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

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

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

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

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

There are areas of public land within the referral area that are used for conservation and recreational purposes. These areas are to be avoided as much as feasibly possible from construction work activities and siting of Project infrastructure.

Land used for conservation or recreational purposes within the referral area include:

- Bael Bael Grassland N.C.R Nature Conservation Reserve
- Lake Lookout Bushland Reserve
- Korrak Korrak Bushland Reserve
- Cannie Nature Conservation Reserve
- State Forest in Malee Dryland Region
- Mosquito Creek Streamside Reserve
- Avoca River Reserve
- Griffith Lagoon Nature Conservation Reserve
- Quambatook Bushland Reserve
- Quambatook I204 Bushland Reserve
- Lake Gilmour Wildlife Reserve (hunting)
- Lake Murphy Wildlife Reserve (hunting)
- Sandhill Lake Bushland Reserve
- Koorangie Wildlife Reserve (hunting).
- Yassom Swamp Nature Conservation Reserve.

Refer to **Figure 9** in **Attachment 1.**

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

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

The extent of any vegetation clearing required for the Project has not yet been determined. However, any clearing of vegetation has the potential to affect landscape values in the areas immediate to the clearing. Mitigation measures will be considered including minimisation of vegetation clearance, particularly in sensitive areas.

The Project will also adopt a minimum setback of 1.5 km from dwellings (unless written consent from landowner is obtained for a reduction in this buffer) and undertake measures to mitigate visual impact as much as feasibly possible, noting that there is opportunity to do so. The Project does not anticipate the need to alter existing landforms with consequential impacts to landscape values. The Project will seek to locate transmission infrastructure within existing utilities and infrastructure easements and corridors where possible. A detailed Visual and Impact Assessment (**LVIA**) will be undertaken to determine the potential to affect landscape values.

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

☐ NYD ☒ No ☐ Yes Please briefly explain response.

The referral area does not include any area considered to be of regional or State importance and none have been identified within the surrounding area of locality of the Project site.

Is mitigation of potential landscape effects proposed?

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

The Project will adopt a minimum setback of 1.5 km from all dwellings (unless written consent from landowner is obtained for a reduction in this buffer) and undertake measures to mitigate visual impact as much as feasibly possible. The Project will seek to locate transmission infrastructure within existing utilities and infrastructure easements and corridors where possible.

The Project has and will continue to engage with affected landowners and local communities to understand and concerns regarding landscape effects and used to inform project design and development. The Project will establish visual screening opportunities where it is required and recommended by the detailed Landscape and Visual Assessment.

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

N/A

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

- The landscape character of the site and surrounding areas including landform, vegetation types and coverage, water features, any other notable features and current land use;
- The location of nearby dwellings, townships, recreation areas, major roads, above-ground utilities, tourist routes and walking tracks;

- Views to the site and to the proposed location of wind turbines from key vantage points (including views showing existing nearby dwellings and views from major roads, walking tracks and tourist routes) sufficient to give a sense of the overall site in its setting.

Soils

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

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

The CSIRO databases indicate that most of the Referral area contains regions where ASS have an extremely low or low probability of occurrence, with some areas close to existing water bodies having a high probability of ASS occurrence. Detailed assessment of ASS would be undertaken to inform project design and development. The micro-siting of turbines and associated infrastructure will avoid these areas identified as having higher potential for acid sulphate soils.

EMO exist within the referral area; however, further assessment will be undertaken to confirm the potential for highly erodible soils to occur and that could be affected by the Project.

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

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

Presence of geotechnical hazards within the referral area will be confirmed through a geotechnical assessment.

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

N/A

15. Social environments

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

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

The Project is expected to increase volumes of traffic during the construction phase which is expected to occur over 24 – 36 months. The volume of traffic generated during the construction phase would vary depending on whether there is an on-site quarry or material that is sourced off site from nearby quarries. The Project expects negligible impact on traffic volumes once operational.

A traffic impact assessment will be prepared to provide a detailed assessment of the anticipated construction traffic and likely transport impacts of the Project. Suitable mitigation measures developed and documented in a Traffic Management Plan as required.

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

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

Temporary effects on residents during the construction phase due to dust, noise, traffic or visual effects may occur during construction. These effects on amenity will be managed and minimised by implementing the following measures where possible (but not limited to):

- WTGs to be located at least 1.5 km from all dwellings (unless written consent from landowner is obtained for a reduction in this buffer).
- Project infrastructure including internal tracks, cabling and access gates will be positioned to minimise effects on amenity as much as feasibly possible during both construction and operation.
- Implementation of a CEMP prepared in accordance with best practice and to the satisfaction of the Responsible Authority prior to construction.
- Regular watering down of access roads for dust suppression.
- Construction speed limits imposed to reduce dust and accelerated road degradation and increase safety to other road users.

During the operational phase, there is potential for effects on amenity such as visual and noise, noting that these are intended to be mitigated upon the detailed design phase with the benefit of further technical assessments.

The preliminary visual effects have been assessed as part of the Preliminary Landscape and Visual Impact Assessments (**Attachment 4** and **Attachment 8**) and are discussed in Section 11 and 14 of this form.

Potential effects from noise and shadow flicker will be assessed as part of the design development.

Is there a potential for exposure of a human community to health or safety hazards, due to emissions to air or water or noise or chemical hazards or associated transport?

☐ NYD ☒ No ☐ Yes If yes, briefly describe the hazards and possible implications.

The Project does not anticipate introducing any health or safety hazards to the community due to emissions to air, water or chemical hazards.

Potential effects from noise emissions will be assessed as part of the design development and suitable mitigation measures developed as required.

A traffic impact assessment will be prepared to provide a detailed assessment of the anticipated construction traffic and likely transport impacts of the Project. Suitable mitigation measures developed and documented in a Traffic Management Plan as required.

Is there a potential for displacement of residences or severance of residential access to community resources due to the proposed development?

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

The Project is not anticipated to result in short or long term displacement of residences or severance of residential access to community resources.

The closest townships with community facilities are Kerang, Boort and Lake Boga, located approximately 8.5 km, 23.5km and 18.5 km from the referral area, respectively. Severance of access to these townships during the construction of the Project is not expected.

The township of Quambatook is within the Transmission Corridor Study Area and about 9 km south of the Wind Farm Area. The design and siting of the Project will not affect residential access to community resources.

Any effects on the transport network would be short term during construction and will be mitigated and managed through implementation of a Traffic Management Plan.

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

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

Wind energy facilities are considered to be a compatible land use with agricultural activities. Typically, agricultural operations may lose around 1-3% of land due to displacement from wind farm infrastructure and associated works. The remaining land can continue to operate for agricultural purposes. Wind farm operations and infrastructure often provide increased benefits to agricultural operations, with access tracks providing all weather access to property and hardstands providing stable, dry and accessible areas for famers to temporarily locate their equipment and machinery. In addition, income from wind farm lease payments offers an additional, stable income for farmers.

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

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

The Project is not expected to result in changes to non-residential land use as less than 3% of the referral area would be affected. The remaining land can continue to be used for agricultural operations for the duration of the Project.

Is mitigation of potential social effects proposed?

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

The Project has engaged landowners within the Wind Farm Area and have obtained their agreement to proceed with the assessment and development of the wind farm project.

The Proponent also will confirm land parcels required by the preferred transmission corridor route (still to be determined) and identify the affected landowners, land managers, residents, community groups and industry stakeholders. Consultation will occur with the identified affected stakeholders to confirm the potential impacts due to the Project. This consultation will inform an important part of the project and design development process, social impact assessment, and inform the development relevant mitigations and controls such as traffic management and access continuity plans, business continuity plans, potential temporary diversions, and relocations.

The Proponent is committed to engaging closely with the communities local to the Project. A Social Impact Assessment will be prepared which will identify and address potential social effects from the Project. The Proponent has also developed and is in the process of implementing a Community and Stakeholder Engagement Plan (**CSEP**). As detailed in the Project's CSEP, the Proponent will develop community benefit sharing programs such as neighbourhood benefit programmes, community grant funds and community co-investment and co-ownership programs in line with the *Clean Energy Guidelines for Benefit Sharing (2019)*. These programs will be developed in collaboration with local community. There will be opportunity to revise the CSEP as the Project progresses through the approvals process.

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

N/A

Cultural heritage

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

☐ No If no, list any organisations that it is proposed to consult.

☒ Yes If yes, list the organisations so far consulted.

The Project has commenced consultation with Traditional Owners, including:

- Barapa Land and Water (**Barapa Barapa**)
- Wamba Wemba Land Council Aboriginal (**Wamba Wemba**), who are also Native Title applicants
- Wiran Aboriginal Corporation (**Wiran**).

What investigations of cultural heritage in the project area have been done?

(attach details of method and results of any surveys for the project & describe their accuracy)

- Aboriginal Cultural and Historical Heritage Risk Assessment for Cannie Wind Farm Area (Andrew Long and Associates, 2023) (**Attachment 6**)
- Preliminary Desktop Heritage Assessment for Transmission Corridor Study Area (ERM, 2024d) (**Attachment 9**)

Is any Aboriginal cultural heritage known from the project area?

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

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

The referral area intersects areas of cultural heritage sensitivity, particularly along existing waterways such as the Avova River (refer to **Figure 6** in **Attachment 1**). Preliminary assessments have identified 95 VAHR sites as being present within the referral area. Of these places, 3 are located within the Wind Farm Area and 92 are located within the Transmission Corridor Study Area. The registered VAHR sites have been actively avoided and are not affected by the siting of wind turbines or any of the transmission route options being considered. The identified VAHR sites predominantly comprise of scarred trees with small numbers of stone artefact scatters and earth mounds, located within close proximity to the Avoca River.

A Heritage Advisor will be engaged to prepare a mandatory CHMP for the Project.

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

☐ NYD ☐ No ☒ Yes If yes, please list.

- Budgerum Stock Yards (VHI-H7626-0002)
- Budgerum Cemetery (VHI-H7626-0001)

Is mitigation of potential cultural heritage effects proposed?

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

A detailed assessment of potential heritage impacts will be undertaken as project design progresses and transmission route are selected. The current Project design has sought to avoid known VAHR sites and areas identified as high cultural heritage potential to minimise impacts.

A CHMP will be prepared to provide specific management and mitigation measures to be implemented prior to and during construction activity to avoid and manage the potential for harm to cultural heritage. The CHMP will include procedures to address unexpected finds. Protocols and trainings associated with unexpected finds will be included in the CEMP construction site induction.

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

N/A

16. Energy, wastes & greenhouse gas emissions

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

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

Please add any relevant additional information.

The Project is proposed to comprise up to 174 WTGs and provide up to 1,300 MW of wind generation.

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

- ☒ Wastewater. Describe briefly.
- ☒ Solid chemical wastes. Describe briefly.
- ☒ Excavated material. Describe briefly.
- ☒ Other. Describe briefly.

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

The main forms of waste that would be generated from the Project through the construction phase and may include the following:

- Wastewater in the form of grey water and sewerage will predominantly be generated in the site compounds and will be stored in tanks on site and pumped onto trucked before appropriate disposal from the Project site.
- Materials excavated from establishment of WTG foundation will predominantly be in the form of spoil. Spoil may need to be temporarily stored on site and re-used for fill and access tracks. If any material needs to be removed from the site, it would be transported to a licensed landfill facility.

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

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

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

Low levels of CO_2 emissions would be generated by the Project during construction and operation from construction machinery and traffic. This would be heavily offset by the Project generating electricity which will displace greenhouse emissions from other sources of power. The Project is anticipated to generate clean renewable energy to power approximately 800,000 Victorian homes per year. The Project is estimated to offset potentially 4 megatonnes of CO_2 per year, a potential contribution of 65% to the Victorian Renewable Energy Target.

17. Other environmental issues

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

☒ No ☒ Yes If yes, briefly describe.

There is potential for the Project to impact aviation and cause electromagnetic interference to local communication systems. Both these aspects will be assessed through further investigations, which will stipulate suitable mitigation measures as required. All other anticipated environmental effects have been outlined in this referral.

18. Environmental management

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

☒ Siting: Please describe briefly

The proposed referral area allows the Project the flexibility to adopt the principles of avoid, mitigate and offset to minimise the potential of adverse environmental effects.

Avoid

Further design development to identify a preferred transmission corridor route and siting of other Project infrastructure will consider the existing environment and identified areas of sensitivities, including cultural heritage, social, environmental and ecological, existing land holdings and existing infrastructure. Buffer zones and no-go zones would be implemented where proposed Project infrastructure may have the potential to impact on sensitive areas.

Mitigate

Where areas of sensitivities cannot be avoided, best practice measures will be implemented, where possible, to reduce the potential impact to acceptable levels. Such measures may include:

- Micro siting of infrastructure to reduce impacts to sensitive areas where they cannot be avoided.
- Adopting of trenchless technologies to avoid impacts to vegetation where relevant.
- Siting and design of above-ground infrastructure to reduce landscape and visual amenity impacts.
- Implementation of best practice and robust construction environmental management measures to reduce scale and intensity of potential temporary impacts.

Offset

Unavoidable impacts to native vegetation would be implemented to accord with the requirements of applicable Victorian and Commonwealth guidelines. Consultation with affected stakeholders and relevant regulatory authorities may inform other Project activities and design solutions.

☒ Design: Please describe briefly

Outcomes of the assessments completed to date have informed the design process to avoid and minimise effects, and refinement to Project boundaries have been undertaken based on recommendations from specialists. This includes the Transmission Corridor Study Area, which has been reduced to remove a fourth option to connect the Wind Farm Area to the VNI West terminal station. This option was removed to avoid impacts to areas of high cultural heritage sensitivity and high ecological values generally associated with the Murray River.

Future design development will continue to adopt the principles of avoid and mitigate in informing both design and Project decisions. As the operational Project infrastructure is inert infrastructure, ongoing environmental impacts would be limited. Landscape and visual impacts will be mitigated through consideration of siting, built form, materials and existing landscape context.

☒ Environmental management: Please describe briefly.

The Project is committed to best practice environmental management in detailed design, construction and operation. Project specific CEMP and OEMP would be developed to specifically address residual environmental risks after the application of the avoid, minimise and offset hierarchy. In relation to environmental management, the CEMP/OEMP would identify:

- Project objectives and targets.
- Roles and responsibilities.
- Environmental legislation, policies, and guidelines relevant to the Project.
- Environmental risks relevant to the Project
- Mitigation measures and/or sub-plans required to address specific environmental aspects
- Compliance, auditing, and environmental reporting requirements.

☐ Other: Please describe briefly

19. Other activities

Are there any other activities in the vicinity of the proposed project that have a potential for cumulative effects?

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

Normanville Energy Park is a wind farm proposed to be located within the eastern side of the Project's Transmission Corridor Study Area with up to 17 WTGs. It is unknown as to whether this proposed wind farm will result in cumulative impacts. The project has been identified via the development's project website.

No formal planning process has commenced for the Normanville Energy Park project as per the date of this referral.

At this stage, there are no other known activities or proposed projects in the vicinity of the Project that are anticipated to result in cumulative impacts.

20. Investigation program

Study program

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

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

The below listed studies were reviewed to inform the current assessments completed, **Attachments 3** to **9**. These additional studies are not attached as part of this referral.

- Phase 1 Studies prepared by Umwelt (Australia) Ptd Limited (2022) to identify any key environmental and planning risks present within the wind farm area.
- Preliminary Flora and Fauna Assessment prepared by Ecolink (2022) for the wind farm area, dated 26 April 2022.
- Cultural Heritage Phase 1 Assessment, Kerang Wind and Solar Farm, dated 26 July 2022
- Preliminary Landscape and Visual Assessment, Kerang Wind and Solar (2022) by Landform Architect Pty Ltd, dated 26 April 2022.
- Phase 1 Feasibility Surface Water Assessment – Kerang Wind Farm (20 by Hydrology and Risk Consulting Pty Ltd, dated 26 April 2022.

Has a program for future environmental studies been developed?

☐ No ☒ Yes If yes, briefly describe.

A number of further investigations are planned which will be necessary to inform the detailed design of the Project. These studies and assessments are likely to include:

- Flora and Fauna
- MNES and FFG targeted surveys
- Bird and bat utilisation surveys
- Brolga assessment
- Landscape and Visual Impact Assessment
- Noise Assessment
- CHMP
- Bushfire Assessment
- Electromagnetic Interference Assessment
- Shadow Flicker Assessment

- Blade Glint Assessment
- Aviation Impact Assessment
- Hydrogeology Assessment
- Social Impact Assessment.

Consultation program

Has a consultation program conducted to date for the project?

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

The Project is committed to open and transparent engagement with stakeholders and the community; building relationships to achieve the best outcomes for the Project, environment and community.

The Project has commenced consultation with the following:

Government and regulatory agencies

- Commonwealth Department of Climate Change, Energy and the Environment and Water (**DCCEEW**), EPBC Act pre-referral meeting held on 30 November 2023.
- Victorian Department of Transport and Planning (**DTP**), EES pre-referral meeting held on 22 November 2023, with ongoing follow up meetings.
- Victorian Department of Energy, Environment and Climate Action (**DEECA**), Loddon Mallee, meeting held on 8 February 2024.
- Gannawarra Shire Council – regular discussions with representatives on the progress of the Project since 2023. The proponent has sought for recommendations for public consultation timing, location, extent, and forms of communications to the local community.
- Swan Hill Shire Council – regular discussions with representatives on the progress of the Project since 2023.
- Australian Energy Market Operator (**AEMO**), meeting held on 5 December 2023.

Traditional Owners

- Barapa Land and Water (**Barapa Barapa**)
- Wamba Wemba Land Council Aboriginal (**Wamba Wemba**)
- Wiran Aboriginal Corporation.

General community

- Local landowners – group meetings and face-to-face meetings held with landowners affected by the referral area since 2023.
- Local community – face-to-face information sessions:
  - 20 February 2024, at Quambatook Memorial Hall, 59 Guthrie Street, Quambatook
  - 21 February 2024, at Lake Boga Community Centre, Lalbert Rd, Lake Boga.

Project land requirements will be secured via commercial land lease/licence agreements applied to private freehold land. The agreements will provide for long-term lease and easement arrangements that will extend for the operational life of the wind farm.

Has a program for future consultation been developed?

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

A summary of key stakeholder groups and organisations to be engaged and continued to be engaged throughout the development of the Project are summarised below:

- Business entities including businesses with interests in the area, proximate to the Project including local aviation operators.
- Telecommunication entities including owners of communication mast of operations of communication links in the area of the Project.
- Government agencies including the Gannawarra Shire Council, Buloke Shire Council, Loddon Shire Council, FPSR, DTP, DEECA, DCCEEW, AEMO and relevant local state and federal members of parliament.
- Local landowners.
- Community consultation with respect to the wind farm and transmission corridor
- Further activities planned in 2024 include:
    - Community engagement on the Transmission Corridor Study Area inclusive of a 5 km buffer for unaddressed mail out, local paper advertisements and information session(s) to best capture and engage the local community.
    - Feedback surveys for various stakeholder groups to obtain feedback on the Project inclusive of the Transmission Corridor Study Area.
    - Councillor meeting briefing for Gannawarra Shire Council to provide project update and upcoming key activities in the area.
    - Community update post referral application outcome.
    - Seek community sponsorship opportunities for local events and groups.
    - Further discussions with First Nation organisations and opportunities to contribute to their organisation’s needs.

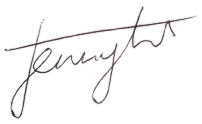
Authorised person for proponent:

I, **Mike Head, Environment Manager, RES,** confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature  **Date 10 May 2024**

Person who prepared this referral:

I, **Jenny Luk, Partner, ERM,** confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature  **Date 10 May 2024**