

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 CD or DVD copy of all documents will be needed, especially if the size of electronic documents may cause email difficulties. **Individual documents should not exceed 2MB as they will be published on the Department's website.**

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

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

Postal address

**Minister for Planning
GPO Box 2392
MELBOURNE VIC 3001**

Couriers

**Minister for Planning
Level 20, 1 Spring Street
MELBOURNE VIC 3001**

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
Authorised person for proponent: Position: Postal address: Email address: Phone number: Facsimile number:	Matthew W Rebbeck Chief Operating Officer Suite 4 Level 1 760 Pacific Highway Chatswood NSW 2067 matt.rebbeck@res-ltd.com 02 8440 7401 02 8440 7499
Person who prepared Referral: Position: Organisation: Postal address: Email address: Phone number: Facsimile number:	David Hyett Industry Director – Environment AECOM Australia Pty Ltd Level 9, 8 Exhibition Street Melbourne VIC 3000 david.hyett@aecom.com 03 9653 8422 03 9654 7117
Available industry & environmental expertise: (areas of 'in-house' expertise & consultancy firms engaged for project)	Biosis Pty Ltd Flora and Fauna Assessment Green Bean Landscape Architects Preliminary Landscape and Visual Assessment. Archaeology at Tardis Desktop Cultural Heritage Assessment RES Australia Preliminary Traffic and Transport Assessment RES Australia Geology and Hydrology Assessment

2. Project – brief outline

Project title: Murra Warra 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 site for the Murra Warra Wind Farm covers approximately 4,250ha of private and public land located within the Kewell, Blackheath and Murra Warra districts. The site is located in the Wimmera region approximately 25km north of Horsham. Warracknabeal is the nearest significantly sized settlement, approximately 15km north of the site. The proposed site is located wholly within land zoned for farming, which has been heavily cleared, and the predominant activity is broad acre cropping and grazing. Refer to Figure 1 - Site Location for further details.
Short project description (few sentences):

The Murra Warra Wind Farm would comprise up to 116 wind turbines and associated permanent and temporary infrastructure. Permanent infrastructure would include:

- up to 116 wind turbines of approximately 3.6MW capacity each
- approximately 75km of internal site access tracks
- up to four permanent anemometry masts
- approximately 75km of underground cabling
- approximately 18km of overhead cabling and up to two intermediate collector stations
- a terminal substation and connection to the SP Ausnet 220kV high voltage transmission line located in the centre of the site
- a utility area including an operations and maintenance building, car parking, site office and warehouse/workshop facility
- upgrades to existing public roads which would be utilised by the project, and new access points to the site.

Temporary infrastructure associated with the development would include:

- construction compounds
- turbine component lay down areas
- concrete batching plant(s).

A sandstone quarry of approximately 12ha would be established on site to supply approximately 600,000m³ of base material for road construction and crane hardstand areas.

3. Project description

<p>Aim/objectives of the project (what is its purpose / intended to achieve?):</p> <p>The objective of the project is to generate electricity from renewable energy for export to the transmission network. It is estimated that the project would provide clean energy for up to 212,000 Victorian households and reduce the emissions of greenhouse gas by up to one million tonnes annually. The project would contribute to the national objective to produce 33GWh of electricity from renewable sources by 2020.</p>
<p>Background/rationale of project (describe the context / basis for the proposal, eg. for siting):</p> <p>The proposed area has many characteristics which would enable a wind farm to be constructed and operated in a manner that is sensitive to the environment, community and current and ongoing land use. The area is cleared farm land and the predominant land use is broad acre cropping and grazing. The area is sparsely populated with residential and/or farming properties, the majority of which are owned by land owners involved with the project.</p> <p>Based on the findings of the preliminary investigations undertaken to date, the project can be developed, constructed and operated to avoid significant adverse impacts on community, ecology, heritage, landscape and amenity. The project can also be developed in such a way as to minimise the impact on the agricultural capacity of the land. Overall, there is flexibility in the proposed design to position the wind farm turbines and associated infrastructure to avoid impacts on sensitive features and minimise impacts to acceptable levels.</p> <p>The area has a strong wind resource and an existing 220kV transmission line bisects the site from north to south. The site has good transport access to Geelong, Portland and South Australia via Horsham and is sufficiently separated from public use areas and population centres. The major road links in the area include the Henty Highway, Western Highway, Wimmera Highway and Borung Highway.</p>
<p>Main components of the project (nature, siting & approx. dimensions; attach A4/A3 plan(s) of site layout if available):</p> <p>The following is a summary of the permanent and temporary infrastructure required for the project.</p> <p><u>Permanent infrastructure</u></p> <p>Up to 116 wind turbines of approximately 3.6MW rated capacity would be established.</p> <p>The turbines would be three bladed and the maximum height to the tip of the rotor would not exceed 220m. The turbines would comprise up to 5 tubular steel tower sections, mounted by a nacelle containing the generator, gear box and electrical equipment. The specific turbine dimensions would be determined following a commercial tendering process after planning approval has been granted, but would be within the dimensions outlined above. For the purposes of assessing impacts, a candidate turbine has been chosen which is considered suitable for this site - this is the Vestas V136 with a blade tip height at the highest point of approximately 215m. An additional 5m contingency allowance has been made for final turbine selection.</p> <p>Crane pads of approximately 60m by 40m would be located at the base of each turbine tower for the purpose of providing a stable foundation for cranes to erect the turbines. The crane pads would comprise crushed rock as a base layer (sourced from the on-site quarry) and a top layer of imported material. The pads would be retained after construction.</p> <p>Approximately 75km of internal access tracks would be constructed to a minimum width of 6m with widenings for corners, junctions and passing areas. Where possible, site access tracks would be established to utilise existing access points and roads.</p> <p>Up to four permanent anemometry masts with an indicative hub height of 149m would be</p>

provided for wind resource and data validation purposes. These masts would be located within the boundary of the site at four different corners of the wind farm.

Internally, electricity would be distributed from each wind turbine to a terminal station via a network of medium voltage underground and overhead cables. The electrical reticulation system would comprise approximately 75km of underground cabling between turbines and collection points, transitioning to a network of approximately 18km of overhead 33kV lines on poles up to 35m high, which then take power back to the terminal substation.

A utility area, collector/switch yard and terminal station would be co-located at approximate grid coordinates *618363m Easting 5967266m North in MGA 54, DATUM GDA94*. The utility area would be in a secure enclosed compound and would comprise an operations and maintenance building, car parking, a site office, a warehousing/workshop facility and an external yard area for storage, including a bunded area for fuel storage as well as other ancillary equipment.

The collector/switch yard would be where the overhead and underground cables from the wind farm would be terminated. Typically, this would comprise bus bars, switch gear, metering, a control building and harmonic filtering plant and other ancillary equipment. There would be pylon structures to support cables from the internal overhead lines and out to the adjacent terminal station.

The terminal station would be located in a secure enclosed compound and typically comprise transformation equipment, bus bars, switch gear, disconnectors, a control building, communications tower and other ancillary equipment to enable connection to the adjacent 220kV transmission line. This would include surge arrestors and pylon structures to support cables from the collector yard and up to the adjacent 220kV transmission line.

Temporary infrastructure

A main construction compound would be located adjacent to the utility area. The compound would host parking, storage, offices and amenities, up to three concrete batching plants and potentially a rock crushing plant. A water storage dam would also be located at the main construction site.

Additional construction compounds would be established to service the terminal station and the connection to the 220kV transmission line. These would be located adjacent to the terminal station. Due to the large extent of the site, further construction compounds would be established as required within the wind farm boundary – potential sites include in the south west adjacent to Kings Road and in the north east adjacent to the Kewell North School Road.

A quarry of approximately 12ha in area (including space for overburden storage) by up to 7m in depth would be established, central to the project site and immediately north of the utility area and terminal station. The depth of the quarry has been determined taking into account the equipment that would be used to extract material and knowledge of the way the geology is stratified.

The quarry would provide approximately 600,000m³ of base material, such as sandstone, for road construction and crane hardstand areas.

Refer to **Figure 2 - Infrastructure Drawing** for further details.

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

Some limited trimming and removal of roadside vegetation is likely to be needed within the wind farm boundary, particularly along Ailsa Wheat Road, Dogwood Road, Kewell North School Road and Shalders Road. Vegetation removal along these roads has been accounted for in the estimates of impacts on vegetation provided in Section 12. Many of these roads are unsealed and unformed and are in poor condition. Improvement of these roads along all or part of their length will be a feature of the project. New access points will also be created along these roads. Subject to further negotiations with Yarriambiack Shire Council, a 1km section of the Dimboola-

Minyip Road may also be improved from the Henty Highway Junction to a point approximately 1km east. This section is currently a sealed single carriageway road with gravel shoulders and the works considered will be limited to sealing the gravel shoulders and improving the condition of the current carriageway along this section only. If the Council consider that this work is required it will not involve any additional native vegetation removal. The Henty Highway Road Junction has already been recently improved and further works at this location are not being considered.

The precise details of road improvements would be determined in consultation with councils following a detailed transport routing assessment that would occur during the detailed design phase. Approvals would be sought for native vegetation removal where required.

Key construction activities:

Site preparation: this would involve creation of entrances from public roads, land clearance for compounds and laydown areas, establishment of construction compounds and establishment of on-site dams where required.

Site tracks: this would involve land clearance and removal and stockpiling for future use and re-topsoiling, excavation, filling, laying bedding materials and track surface materials.

Crane pads: this would involve land clearance and topsoil removal, stockpiling at pad locations, excavation, filling and laying bedding and surface materials.

Foundations: this would involve land clearance and removal and stockpiling of topsoil at foundation locations. Installation of steel reinforcement and pouring of concrete to form turbine gravity base. Curing of concrete and then backfilling and replacing topsoil to ground level.

Electrical works: This would involve trenching of cable routes, laying bedding materials, cables and engineered backfill, replacement of top soil to ground level. Clearance of overhead wire routes and installation of poles and wires and construction of collector stations.

Terminal substation and operations and maintenance buildings: this would involve clearance of land, removal and storage of topsoil, excavation and pouring of building foundations and concrete pads at switch yard and transformer locations. Installation of electrical equipment and landscaping.

Turbines: this would involve delivery of turbine components to site, installation of turbines at each location involving placement of tower sections on foundations followed by the nacelle, hub and blade assembly.

Commissioning: this would involve testing of all electrical and mechanical systems from each turbine through the reticulation system to the terminal station to the metering and connection point. Connecting to the existing 220kV transmission line. Completion of the operations and maintenance buildings.

Finishing: this would involve removal of temporary structures, plant and equipment. Site cleanup, re topsoiling and revegetation (where required).

Quarrying: a temporary on-site quarry would provide around 600,000 m³ of sub base material for road and hardstand construction. This will be subject to a separate approval of a Work Plan by the Department of Energy and Earth Resources under the *Mineral Resources (Sustainable Development) Act 1990*.

Rock crushing and concrete batching: a plant would be established for rock crushing, and up to three temporary concrete batching plants would be established to produce the concrete required for construction. These facilities would be located at the nominated site construction compound.

Transportation: the construction activities described above would involve transport to site, including for materials, turbine components and plant and equipment. It is expected that site personnel would also commute to and from the wind farm site.

Key operational activities:

<p>Operation and maintenance of the wind farm facilities is likely to include activities such as service and repair of turbines, regrading of access tracks, maintenance of the electrical reticulation system and buildings and plant, including control systems. The HV connection to the 220kV transmission line would be maintained by SP AusNet Services. Day to day monitoring and maintenance of the systems and wind farm facilities would be carried out by staff located on site with some monitoring being carried out remotely.</p>
<p>Key decommissioning activities (if applicable):</p> <p>The operational life of the wind farm is expected to be around 25 years after which time the facility may be decommissioned and removed, or subject to a further planning application if required, repowered with new turbines. Decommissioning activities would include removal of all turbines and above ground infrastructure (including foundations to 1m below surface level), with the exception of access tracks and entrances where required for the benefit of landowners and any shared network substation building, as required by the Network Service Provider. All sub-surface infrastructure at the site would remain buried to plough depth (approximately 1m below surface level). Following decommissioning, the land would be rehabilitated to allow for agricultural purposes.</p> <p>The proposed quarry would be rehabilitated at the end of its life in accordance with the approved work plan established under the <i>Mineral Resources (Sustainable Development) Act 1990</i>.</p>
<p>Is the project an element or stage in a larger project?</p> <p><input checked="" type="checkbox"/> No <input type="checkbox"/> 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).</p> <p>Depending on the prevailing market conditions the project described may be delivered in two or more stages.</p>
<p>Is the project related to any other past, current or mooted proposals in the region?</p> <p><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please identify related proposals.</p>

4. Project alternatives

<p>Brief description of key alternatives considered to date (eg. locational, scale or design alternatives. If relevant, attach A4/A3 plans):</p> <p>RES Australia has many development sites across the world and since 2004 has been growing the number of potential sites in Australia. Globally, RES have developed over 10GW of wind capacity. Sites are selected for inclusion as a potential site based on an assessment of wind resource, access to the electricity grid, environmental constraints, landowner attitudes, current land uses, transport links and community impacts. Sites are ranked and the best are prioritised. RES have other development opportunities in SA, NSW and Tasmania. Site analysis undertaken by RES Australia illustrates that Murra Warra would be a high performing wind farm with low environmental and community impacts.</p> <p>The location of the quarry site (within the Murra Warra Wind Farm development) has been selected as it is located directly adjacent to an old sandstone quarry. Further investigation of the site revealed the presence of suitable sub base material which would form the bulk of what is required to construct access tracks and crane hardstand areas for the project. Being central to the overall wind farm site, the location would enable efficient supply of quarried materials across the site. Sourcing the sub base material from an on-site quarry would also reduce the volumes of traffic on the road network in the vicinity of the proposed wind farm development, compared with the off-site quarry alternative, particularly along the Henty Highway and the 3km of Dimboola Minyip Road leading from the Henty Highway to site.</p>
<p>Brief description of key alternatives to be further investigated (if known):</p>

Not applicable.

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:

Not applicable.

6. Project implementation

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

RES Australia is a division of the UK based RES Group which is a sister company of the 150 year old Sir Robert McAlpine group. Sir Robert McAlpine is a leading UK Construction and Civil Engineering company and over its history has been responsible for the construction of many significant infrastructure and iconic building projects. Most recently the company was the contractor responsible for building the main stadium for the 2012 London Olympics.

RES was formed over thirty years ago and has become a leading global renewable energy company with over 10GW of wind energy constructed and over 5,000 turbines installed in locations both on and off shore across the world. RES are a developer, owner, constructor and operator of wind energy projects as well as developing and building solar, biomass, energy storage and transmission line projects.

RES Australia has been operational in Australia since 2004 and has developed wind farm sites at Taralga NSW (51 turbines currently operational) and Ararat (75 turbines under construction). RES Australia are actively developing other wind farm projects in Victoria, South Australia and Tasmania.

Implementation timeframe:

Construction of the Murra Warra Wind Farm is expected to take approximately 26 months. Once commissioned, the wind farm would operate for about 25 years.

Proposed staging (if applicable): At this current stage of project development, it is not proposed to stage development of the wind farm. However, depending on market conditions the project may be delivered in two or more stages.

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 proposed Murra Warra Wind Farm site covers an area of approximately 4,250ha and is located within the Murray Basin geological area. The topography is extremely flat with a gradual northwards slope of about 1m fall per 1km run. No significant bulk earthworks are required for construction of access roads. Suitable materials for base materials for road construction can be sourced from within the perimeter of the proposed wind farm site.

The proposed site is situated about halfway between Horsham and Warracknabeal and is centred about 7km west of the normally dry Yarriambiack River – refer to Figure 1. No part of the area was subject to flooding during the recent 2010-2011 extreme flood events in the Wimmera region. There are no designated waterways within the site and the obsolete open channels in the area are from the decommissioned open water supply system, which is being filled in on an ad hoc basis. The open channel water system was recently replaced (2006 – 2010) by the extensive Wimmera Mallee Pipeline Project from which construction water is expected to be sourced. The groundwater table is in the order of 30m below the existing ground surface. The entire site area is broad acre cropping land with only small pockets of remnant native vegetation remaining on road reserve areas and within farming areas.

Existing infrastructure across the site includes a main 220kV electricity grid line which bisects the site from north to south and forms part of the main Victorian 220kV grid infrastructure. It is

proposed that the wind farm directly connects to this line. Additionally, there is a local 22kV line which runs north to south along the Ailsa Wheat Road and two single wire earth return circuits which form part of the local electricity distribution network. Telstra underground telephony circuits run along many of the road side verges. Water is supplied via the reticulation system installed in 2009 as part of the Wimmera Mallee Pipeline system.

There is one former rehabilitated quarry located in the north of the site close to the site of the proposed new quarry and terminal station (see Figure 3).

The road network comprises one sealed road, the Dimboola-Minyip Road which bisects the site east to west. This road intersects with the C231 Blue Ribbon Road to the west of the site and the B200 Henty Highway to the east. The regularly shaped paddocks are accessed by a network of unpaved and largely unformed roads which form a grid pattern of north south and east west aligned road corridors.

Site area (if known):

The proposed site area for the Murra Warra Wind Farm is approximately 4,250ha. However, only around 1.9% of this area would be impacted by permanent wind farm infrastructure including access tracks, crane hard stands, turbine bases, the quarry site, terminal station and operations and maintenance building.

Route length (for linear infrastructure) (km) **and width** (m)

Current land use and development:

The predominant existing land use is broad acre cropping and grazing. These uses would be able to continue during the construction and operation phases of the project. Final road, building and turbine footprint impacts would result in an approximate reduction in cropping area of around 1.9%.

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

Adjoining land to the proposed development is also used for broad acre cropping and grazing and farm dwellings and associated structures are located on surrounding properties.

Roads that run through the site are minor rural roads, most of which are either graded or ungraded in varying condition. There are two sealed roads in the vicinity, both of which are single carriageway with gravel shoulders. Dimboola Minyip Road runs east-west through the centre of the site and Barrat Road runs along the northern edge of the site. The nearest class B highway is the Henty Highway which runs approximately 4km to the east of the site and class C Blue Ribbon Road which runs approximately 4-5km to the west of the site. The closest centres of urban population are Warracknabeal which is 15km north of the site, Horsham which is 25km south of the site and Dimboola which is 20km south west of the site.

There are a total of 26 dwellings located within 3kms of the proposed wind turbine locations. Within approximately 1km distance from turbines, there is one dwelling and three former dwellings. Three of these dwellings are owned by landowners associated with the project, and one is owned by a non-associated landowner. The three former dwellings have not been occupied for many years and are in an advanced state of decay. RES will have agreements with the owners of these structures for them to be removed prior to the commencement of construction. The dwelling which is currently occupied is owned by an associated landowner.

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

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

The Victoria Planning Provisions (VPP) define a wind energy facility (Clause 74 Land use terms) as:

Land used to generate electricity by wind force. It includes land use 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.*

The use of land to transmit or distribute electricity generated by wind, whether or not on the same land title as the wind energy facility, is a separate land use defined as either a '*utility installation*' or a '*minor utility installation*', depending on the nature and capacity of the transmission or distribution infrastructure.

The Minister for Planning is the responsible authority for planning permit applications for transmission infrastructure associated with a wind energy facility. This includes any removal of native vegetation associated with this infrastructure. A single planning permit application can include the wind energy facility and electricity network connection.

A recent amendment (VC124) to the Victoria Planning Provisions (VPP) included the following amendments of relevance to the proposed development:

- Amending Clause 19.01-1 'Provision of Renewable Energy' to reference the updated Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (Guidelines) 2015.
- Amending Clause 52.32 'Wind Energy Facility' to reduce the allowable distance of a turbine to a dwelling from 2km to 1km (consent is required from the owner of a dwelling to locate a turbine closer than one kilometre to the dwelling) and clarify the application of the 1km rule to applications for minor amendments to existing permits.
- Amending Clause 61.01-1 'Minister is the Responsible Authority' to make the Minister for Planning the responsible authority for all new planning permit applications for the use and development of land for the purpose of a Wind energy facility.

The project site is located within the Horsham Rural City Council and the Yarriambiack Shire Council municipal areas and is subject to the provisions of the *Planning and Environment Act 1987*. The boundary between the two Council areas runs east-west along the Dimboola Minyip Road. The use and development of land for the purpose of a wind energy facility requires a planning permit under Clause 52.32-2 of the two applicable planning schemes. It is proposed that a planning permit application would be submitted to the Minister for Planning, which would be considered under the planning schemes of both Councils.

All planning schemes include specific provisions that apply to assessing proposals for wind energy facilities which include:

- The definition of a wind energy facility in Clause 74 (Land use terms)
- State Planning Policy for 'Renewable Energy' in Clause 19.01 of the State Planning Policy Framework (SPPF), which sets out the objectives, strategies and policy guidelines for the provision of renewable energy including the development of wind energy facilities
- Particular planning provisions and requirements for planning permit applications set out in Clause 52.32 (Wind Energy Facility).

There are also State and local policies in the Horsham Rural City Council and the Yarriambiack Shire Council Planning Schemes that relate to agriculture, environment, landscape values, biodiversity and traffic considerations. These matters are addressed in this referral, to some degree, and would be expanded upon in the Planning Assessment Report to accompany the planning permit application to be submitted to the Minister for Planning.

Other relevant clauses of the SPPF are:

- Clause 12: Environmental and Landscape Values, which seeks the protection of biodiversity, native vegetation management and the protection of significant environments and landscapes.
- Clause 13. Environmental Risk, which seeks to ensure that planning best adopts best practice environmental management and risk management to avoid or minimise environmental degradation and hazards. The clause considers for the management of noise and bushfire risk.

- Clause 14: Natural Resource Management, which requires planning to assist in the conservation and wise use of natural resources including energy, water, land, stone and minerals to support environmental quality and sustainable development. Considerations include the protection of agricultural land, consideration of catchment planning and management, water conservation and quality.
- Clause 15: Built Environment and Heritage, which requires planning to ensure all new land use and development appropriately responds to its landscape, valued built form and cultural context, and protect places and sites with significant heritage, architectural, aesthetic, scientific and cultural value.
- Clause 18: Transport, which includes consideration for an integrated and sustainable transport system.

Neither the Horsham nor Yarriambiack Local Planning Policy Framework (LPPF) contains any specific reference to the development of wind energy facilities. The main focus of the LPPF in both planning schemes is the protection and diversity of agricultural land and activities, the protection of native vegetation and heritage, as well as the development of economic activity.

Clause 22.02 Resource Protection in the Horsham Planning Scheme is the most relevant. It requires the protection and appropriate management of land and water resources within the municipality. Clause 22.02 Rural in the Yarriambiack Planning Scheme is the most relevant as it applies to all land within the Farming Zone. It seeks to protect the natural and physical resources upon which agricultural industries rely and to promote agricultural industries which are ecologically sustainable and incorporate best management practices.

The subject land is located within the Farming Zone (FZ) and a planning permit is required for the use and development of land for the purpose of a wind farm consistent with Clause 52.32. Wind Energy Facility. The decision guidelines require consideration of Policy and Planning Guidelines for the development of wind energy facilities in Victoria.

Relevant Particular Provisions within the two planning schemes include:

- Clause 52.17: Native Vegetation which requires planning approval to remove, destroy or lop of native vegetation to ensure permitted clearing of native vegetation results in no net loss in the contribution made by native vegetation to Victoria's biodiversity.
- Clause 52.08: Earth and Energy Resources Industry which seeks to encourage land to be used and developed for exploration and extraction of earth and energy resources in accordance with acceptable environmental standards.
- Clause 52.09 Stone Extraction and Extractive Industry Interest Areas which seeks to ensure that that use and development of land for stone extraction does not adversely affect the environment or amenity of the area during or after extraction and that excavated areas can be appropriately rehabilitated.

No Significant Landscape Overlays (SLOs) exist within 10km of the site.

An Environmental Significance Overlay (ESO3 Channel and Reservoir Protection) exists in the Yarriambiack Planning Scheme. . The environmental objectives to be achieved by this overlay are:

- *To maintain and enhance the quality and supply of irrigation and domestic water supplies throughout the Wimmera.*
- *To protect water reservoirs and channels from potential sources of pollution.*
- *To control the development of land in the vicinity of the water supply reservoirs and supply channels.*
- *To prevent the unauthorised diversion of water into or from water channels*

As the irrigation system was decommissioned in 2009 and much of the system has now been backfilled, Yarriambiack Shire Council have signalled their intention to lift the protection as defined in the Overlay.

Other regulatory requirements relevant to the proposed wind farm at State and Commonwealth levels include:

- Victoria:

- *Environment Effects Act 1978*
- *Aboriginal Heritage Act 2006*
- *Flora and Fauna Guarantee Act 1988 (FFG Act)*
- Commonwealth
 - *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* if it is likely to have a significant impact on matters of national environmental significance.
 - *Native Title Act 1993*

Local government area(s):

The proposed wind farm development is located in the local government areas of Horsham Rural City Council and Yarriambiack 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):

The project area is located on the Wimmera Plains to the north of Horsham. The area has a long history of dryland agriculture, including both sheep farming and dryland cropping. Very few occupied houses remain within the study area as the size of land holdings has increased in recent generations in order for farm businesses to remain viable.

Native vegetation has been mostly removed from the landscape, and is now limited to road reserves, scattered paddock trees and small remnant patches, typically located near old homesteads. Remaining remnant vegetation includes woodlands dominated by Black Box, and Buloke, with areas of Yellow Box, Yellow Gum and Bull Mallee occurring on higher ground with lighter soil. Some areas around homesteads, driveways and fence lines have been planted with a range of tree species, including non-Victorian eucalypts and introduced trees such as Radiata Pine.

The study area is generally very flat, and is without any major natural drainage lines. It is situated between the Wimmera River and the Yarriambiack Creek, which are both intermittent, north flowing streams that terminate in lakes. Flow only occurs in these waterways following high rainfall, or following release of environmental flows from water storages in the catchment. In the past, water was supplied to farm dams, troughs and tanks within the study area using a series of open channels which were decommissioned as part of the Wimmera Mallee Pipeline Project between 2006 and 2010.

There are a number of farm dams located within the study area, but most of these only hold water for short periods, and they are generally not kept full with piped water. As a result, the study area does not support any permanent aquatic habitats. Following heavy rain, some low lying areas may hold water and provide habitat for frogs and water birds for short periods.

The Barrat State Forest and Barrat Flora and Fauna Reserve are located to the north of the proposed wind farm. This large block of public land includes areas of eucalypt plantations and areas of remnant woodlands. The reserve is significant, as it is the only large block of reserved native vegetation within a large section of the Wimmera Plains. Other large areas of native vegetation include the riparian vegetation along the Yarriambiack Creek, approximately 10km east of the study area, the Wimmera River approximately 15km west of the study area and the Little Desert National Park which stretches from Dimboola (20km south west of the study area) to the South Australian border. The study area is poorly connected with these larger blocks, although several of the east-west road reserves support significant occurrences of native vegetation.

In particular, the Dimboola-Minyip Road (Five Chain Road) supports areas of treeless Plains Savannah, patches of Plains Savannah with a dense Buloke overstorey, Plains Woodland and Black Box Lignum Woodland interspersed with areas dominated by exotic species. Barrat Road and Kewell North School Road also contain moderate quality Plains Woodland. Scattered paddocks trees are also located throughout. Roadsides within the areas are subject to a range of disturbances and as a result, vegetation condition within the road reserves is highly variable, and weed invasion is a significant threat to the long-term persistence of native vegetation.

The study area, although highly modified, supports habitat for a range of common plants and animals that are well adapted to agricultural landscapes. The area also supports occurrences or potential habitat for several threatened species including Buloke Mistletoe, Pale Flax-lily, Brown Treecreeper, Hooded Robin, Eastern Bearded Dragon, Spotted Harrier and Black Falcon.

Additionally, the study area supports areas of Buloke Woodlands (Plains Savannah EVC) some of which corresponds with the definition of the nationally endangered 'Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions', which is protected by the *Environment Protection and Biodiversity Conservation Act 1999*.

9. Land availability and control

<p>Is the proposal on, or partly on, Crown land?</p> <p><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please provide details.</p> <p>The areas of Crown land within the proposed Murra Warra Wind Farm formed part of the now defunct Wimmera Mallee Channel Irrigation System. This system was decommissioned in 2009 and the channels which are proposed to be crossed by the project have been back filled and cropped over. It is RES Australia's understanding that the Crown are willing to return ownership of old channels to the adjoining landowners (at the landowners expense), and RES Australia are investigating this option with the Crown and the relevant landowners.</p> <p>Refer to Figure 3 - Land Ownership and Existing Local Infrastructure.</p>
<p>Current land tenure (provide plan, if practicable):</p> <p>The land is private freehold land, held under various ownerships.</p> <p>Refer to Figure 3 – Land Ownership and Existing Local Infrastructure for further details.</p>
<p>Intended land tenure (tenure over or access to project land):</p> <p>The land tenure would for the most part remain with the landowners shown in Figure 3. It is however intended for the project to purchase approximately 57ha of land adjacent to the grid line for the purposes of locating a terminal substation, providing suitable land for offsetting native vegetation removals and extraction of construction materials, to reduce impacts on local roads and the community.</p>
<p>Other interests in affected land (eg. easements, native title claims):</p> <p>Grampian Wimmera Mallee (GWM) Water has easements and ownership of some irrigation channels which run through the site. These channels were once part of the Wimmera Mallee Irrigation System which was replaced in 2009 by 11,000km of pipeline. The channel system has now been decommissioned and many of the channels have now been backfilled.</p> <p>Refer to Figure 3 – Land Ownership and Existing Local Infrastructure for further details.</p>

10. Required approvals

<p>State and Commonwealth approvals required for project components (if known):</p> <p>Well established approvals processes exist in Victoria to address the approval matters relevant to the Murra Warra Wind Farm. In particular proposed development would require:</p> <ul style="list-style-type: none"> • Approval from the Minister for Planning in relation to the relevant aspects of the Horsham Rural City Council and Yarriambiack Shire Council planning schemes in accordance with the Planning and Environment Regulations 2015 • Approval of a Work Plan for the proposed quarry in accordance with the <i>Mineral Resources (Sustainable Development) Act 1990</i> • Approval of a voluntary Cultural Heritage Management Plan in accordance with to the <i>Aboriginal Heritage Act 2006</i>. <p>An ecological assessment was undertaken by Biosis Pty Ltd (2016). The assessment identified that the study area supports extensive areas of EPBC Act listed Buloke Woodlands of the Riverina and Murray Darling Depression Bioregions. However, avoidance of this community has been an important consideration in the iterative design process and as a result, the current design does not require any removal of this community. Nevertheless, an it is planned that an EPBC Act referral will be submitted to the Department of the Environment for assessment by the Commonwealth under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> stating that the project is 'not a controlled action'.</p> <p>Have any applications for approval been lodged?</p>
--

No Yes If yes, please provide details.

Approval agency consultation (agencies with whom the proposal has been discussed):
Positive discussions have been held with the a variety of agencies, including the agencies responsible for the above approvals, as follows:

- Department of Environment, Land, Water and Planning
- Department of Energy and Earth Resources
- Barengi Gadjin Land Council

Other agencies consulted:

- Horsham Rural City Council
- Yarriambiack Shire Council
- VicRoads
- Aboriginal Victoria.
- Grampian Wimmera Mallee Water
- Civil Aviation Safety Authority
- Air Services Australia
- Wimmera Catchment Management Authority.

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):

Flora and Fauna Assessment (Biosis Pty Ltd 2016)

A Flora and Fauna Assessment has been undertaken by Biosis Pty Ltd to determine the key ecological values within the study area and assess the potential impacts of the proposed wind farm. The assessment included seasonal surveys for key species with the potential to occur on the wind farm site including birds, bats, Golden Sun Moth and Striped Legless Lizard.

The study area for the Flora and Fauna Assessment is located between Horsham and Warracknabeal in the Wimmera Bioregion of Western Victoria. The study area is approximately 10km (east-west) by 7.5km (north-south) encompassing approximately 6,500ha of private land between Blue Ribbon Road and the Henty Highway. The potential impacts on flora and fauna considered in the assessment include:

- impacts to native vegetation and habitat as a result of the siting of turbine locations, hard stand areas, access roads and positioning of power infrastructure
- increased risk of collision by birds and bats as a result of construction and operation of aerial infrastructure, such as turbines and overhead powerlines
- amenity impacts to landowners as a result of construction and operation of the wind farm.

The project design has been through several iterations, with the aim of designing an efficient layout whilst minimising impacts to key biodiversity values. Key inputs to the design have been mapping of biodiversity values, consultation with landowners and proximity to existing road and power infrastructure. Although the proposed project is considered to have a very low impact upon ecological values, largely due to the extensive past clearance of native vegetation, and the incorporation of existing values into the design process, some environmental effects are likely to occur. The environmental effects are summarised below.

Flora species

Significant flora species including Buloke (FFG-listed) and Buloke Mistletoe (DSE Vulnerable) were both recorded in several locations throughout the study area during assessment. No other significant flora species were recorded. Several other FFG Act listed species have the potential to occur. However, the project will not impact on these species due to the minimal extent of impact to native vegetation.

Ecological communities

The study area supports patches of Plains Savannah, Plains Woodland and Black Box Lignum Woodland in a range of condition states. Plains Savannah EVC 826 is widespread throughout the study area, particularly within the western half. This is a structurally diverse vegetation type, ranging from grassland with very few trees to dense Buloke woodlands.

Plains Woodland EVC 803 is generally supported by a mixture of Black Box, Buloke and Yellow Gum. This EVC is located in the eastern half of the study area, with the largest occurrences near Barrat Quarry and south of Old Minyip Road (east of the transmission line).

Black Box Lignum Woodland EVC 663 was recorded along Dimboola-Minyip Road just outside the eastern boundary of the study area. This area supports an overstorey of Black Box, with an understorey dominated by Lignum and a range of other native shrubs and grasses. This community would not be impacted.

The total extent of native vegetation removal required for the project would be less than 2 ha. Due to the minimal extent of native vegetation removal, impacts to these communities are expected to be negligible or minor.

The study area also supports extensive areas of Buloke Woodlands of the Riverina and Murray Darling Depression Bioregions. Areas of Buloke Woodland with a predominantly native understorey correspond with the definition of the Plains Savannah community. Avoidance of this community has been an important consideration in the iterative design process, and the current design does not require any removal of this community.

Fauna species

It is expected that removal of native vegetation would include small amounts of habitat for common fauna species as well as a number of significant fauna species including Black Falcon, Hooded Robin, Eastern Bearded Dragon and Brown Treecreeper. However, significant impacts to these species due to removal of habitat are considered unlikely because of the small amounts of habitat affected and the highly mobile nature of these species.

Construction and operation of aerial infrastructure, including turbines and overhead powerlines will result in an increased risk of collision by bats and birds. The likelihood of significant impacts to threatened species of birds and bats is considered very low, as the listed species recorded or potentially occurring on the site are woodland dependent species unlikely to fly within rotor swept height.

Native vegetation

Under the current proposal a total of 1.685 ha of remnant native vegetation would be removed, including 0.630 hectares of remnant vegetation patches and 15 scattered trees, many of which are required to be removed for construction of the internal power corridor. Removal of some of these trees may not be necessary, but this will not be known until detailed design of power infrastructure is complete.

RES Australia is currently evaluating the suitability of an offset site within the wind farm site boundary. A preliminary assessment of the offset potential of this area indicates that the site potentially provides adequate type and quantity of native vegetation credits to offset the losses subject to the current wind farm layout.

Desktop Cultural Heritage Assessment (Archaeology at Tardis 2016)

A Desktop Cultural Heritage Assessment has been undertaken by Archaeology at Tardis to determine the key cultural heritage values within the study area and assess the potential impacts of the proposed wind farm. The key findings of the assessment are as follows:

Historical heritage

The Historical Heritage Assessment identified:

- that there are no registered historic places within the study area
- that there is potential for the project to impact unknown historic cultural heritage although the potential is considered low.

Aboriginal cultural heritage

The Aboriginal Cultural Heritage Assessment identified:

- that there are no registered Aboriginal heritage places within the activity area
- that there are no known areas of above low Aboriginal cultural heritage scientific sensitivity
- that Aboriginal cultural heritage places with above low scientific significance are unlikely to be found within the activity area.

A voluntary Cultural Heritage Management Plan would be prepared for the project to manage any Aboriginal cultural heritage risk during construction.

Preliminary Landscape and Visual Impact Assessment (Green Bean Landscape Architects 2016)

A Preliminary Landscape and Visual Impact Assessment has been prepared by Green Bean Landscape Architects in accordance with the *Environmental Effects Act 1978* Information Sheet No.2, Information to accompany notifications of proposals: Wind Energy Facilities. This assessment was undertaken at a stage of project development when the wind farm boundary was larger than is currently proposed.

The Preliminary Landscape and Visual Impact Assessment determined that the landscape surrounding the proposed wind farm, as well as the broader view shed (a distance of 10 kilometres extending across the landscape away from the wind turbines), has a low visual sensitivity to change and represents a highly modified and productive agricultural landscape which is common to the Wimmera landscape region.

Taking into consideration a range of key views, the Preliminary Landscape and Visual Impact Assessment determined that the visual impact of the Murra Warra Wind Farm is likely to be low from publically accessible locations. Specifically, the proposed Murra Warra Wind Farm:

- would have a negligible impact on the principal rural townships of Horsham, Dimboola and Warracknabeal
- would offer a range of transitory views on local roads and highways, subject to the direction of travel and screening influence of vegetation along roadside corridors
- would result in no significant visual impact from scenic areas, public reserves and recreational areas, including any available long distant views from Mount Arapiles and the Grampians National Park.

Whilst the Preliminary Landscape and Visual Impact Assessment has not been carried out on surrounding residential dwellings it was noted that a number of farm and residential dwellings surrounding the wind farm, maintain windbreaks around dwellings. The extent of windbreak

planting reduces the potential visibility of the wind farm from a number of residential view locations within the surrounding view shed. The landscape and visual impact associated with dwellings would be undertaken for the detailed Landscape and Visual Impact Assessment, proposed as part of the forthcoming planning process.

Preliminary Traffic and Transport Assessment

A preliminary Traffic and Transport Assessment was performed by RES Australia with input from Rex J Andrews Pty Ltd to identify the key traffic and transport constraints within the study area and assess the potential impacts of the proposed wind farm.

The construction phase for the project would have duration of approximately 26 months and traffic generation would depend on a number of factors. Preliminary analysis of the traffic demands of the various construction phases suggests that the Murra Warra Wind Farm would generate approximately 8,630 heavy vehicle movements and 14,000 light vehicle movements over the entire construction period. These numbers are reflective of an on-site quarry and batch plant. The number of movements would be much greater if an off-site quarry was used.

During peak construction phases, the wind farm would generate approximately 175 vehicles movements per day, including approximately 50 truck deliveries. Whilst vehicles can get close to site using the existing highway network, for the final few kilometres, construction traffic would be distributed on the local road network based on work locations and sources of materials, including delivery of over-size components.

The selection of transport routes identified for access to site are generally suitable for purpose (i.e. transportation of oversize turbine components) and where improvements are required to accommodate vehicles, these upgrades would be undertaken by RES Australia. Recognising that the increase in heavy vehicle movements over a 23 month period may result in increased maintenance requirements and damage to local roads, pavement maintenance agreements are proposed to be provided to the Yarriambiack and Horsham Councils for maintenance of highway sections during construction. Similarly, a pavement maintenance agreement would be provided to VicRoads for use of any 'C' classification roads.

Once completed, the wind farm operation would be monitored daily by personnel located in the maintenance and service building on-site. It is anticipated that there would be up to 15 permanent staff on-site who are likely to commute daily from the Wimmera region. It is expected that vehicle movements would comprise up to three service vans travelling around the site on a daily basis. Minor traffic generation of less than three truck deliveries per week would be associated with the delivery of consumable items required for routine maintenance activities.

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, answers the following questions and attach details.

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

Extensive seasonal surveys of the project site and a wider study area have been carried out by professional ecologists from Biosis Pty Ltd between May 2010 and November 2015. This has included spring flora surveys, mapping of ecological vegetation classes and scattered trees within the study area and detailed examination of areas where impacts cannot be avoided.

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

NYD

The maximum area of native vegetation to be cleared is estimated to be 1.685 ha. This includes 15 scattered trees.

Careful siting of the wind farm infrastructure and the proposed quarry within the project site has enabled clearing of native vegetation to be largely avoided. Native vegetation removal is limited to small sections along roadsides, where access is required to enter paddocks, or where minor road widening may be required. Some small patches on Kewell North School Road, Barrat Road and Dogwood Road are likely to be impacted, with the largest of areas to be removed from within the narrow Dogwood Road reserve. The vegetation along this north-south road is in poor condition, consisting of common native grass species with no overstorey. The area is also subject to regular disturbance by slashing and vehicle movement.

Detailed information on the flora and fauna of the study area can be found in the Flora and Fauna Assessment (Biosis Pty Ltd 2016).

Underground reticulation corridors for the project are yet to be finalised however these will run across open farm land, avoiding areas of ecological sensitivity to join with the overhead collector system which will be located in the corridor shown on the Infrastructure Drawing – see Figure 2. The final placement of underground cables will not result in any further native vegetation losses and the land above will be rehabilitated back to cropping land once the cabling is in place.

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.

Under the current proposal, the following Ecological Vegetation Classes, may be impacted:

- Plains Savannah (EVC 826)
- Plains Woodland (EVC 803).

It is likely that impacts to these EVCs would be reduced as further detailed design work is done.

Have potential vegetation offsets been identified as yet?

NYD Yes If yes, please briefly describe.

An offset site has been identified within the project area. This site, to be purchased by RES Australia, has sufficient quantity and type of native vegetation gains to provide the required offsets. The actual offset requirements would be calculated once detailed design has been completed.

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

Refer to **Flora and Fauna Assessment (Biosis Pty Ltd 2016)** for further details.

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 summary of the ecological survey program undertaken within the study area is included in the table below.

Timing	Description of survey
May 2010	Preliminary flora and fauna survey
February 2013	Flora and fauna assessment
May – June 2013	Preliminary bird and bat utilisation surveys (10 sites – autumn 2013)
November 2013	Spring 2013 flora surveys
November – December 2013	Spring/early summer bird utilisation surveys (24 sites)
January 2014	Bat trapping (2 sites)
January – February 2014	Late summer bird and utilisation surveys (24 sites)
April 2014	Autumn bird and bat utilisation surveys (24 sites)
November – December 2014	Golden Sun Moth survey
September – December 2015	Striped Legless Lizard survey
November 2015	Spring survey of native vegetation to be impacted

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.

Listed ecological communities

The EPBC Act Protected Matters Search Tool predicts that three critically endangered ecological communities that are nationally significant are likely to occur within the study area. These include:

- Grey Box Grassy Woodlands and Derived Native Grasslands of South-eastern Australia (Grey Box Grassy Woodlands)
- Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregion (Buloke Woodlands)
- Natural Grasslands of the Murray Valley Plains.

The Grey Box Grassy Woodlands were not observed within the study area during assessment. Buloke Woodlands are present within the study area, however the project will not impact on any areas of this EPBC Act listed community.

Natural Grasslands of the Murray Valley Plains is potentially present within the study area. The definition of this community corresponds in part with EVC 826 Plains Savannah, limited to areas with <10% cover of trees or large shrubs and having a key range of indicator species. In order to qualify for protection under the Act, patches must have higher cover of native plants than perennial weeds and either have a diverse range of indicator species or be larger patches with lower density. The intention of the listing is to protect 'natural' grasslands, rather than sites that are now treeless due to a history of clearing, grazing or other human-induced disturbances.

Furthermore, the study area potentially supports components of the Victorian Temperate Woodland Bird Community and the Victorian Mallee Bird Community. These communities are defined by a broad geographic area and a list of species which are either 'dependent' or 'associated' with woodland and Mallee habitats. Minimisation of removal of woodland habitat has been given high priority during the iterative design process.

Migratory species

A total of ten EPBC Act listed migratory species have been previously recorded or predicted to occur in the study area. The most recent records of these species were for White-throated Needletail in 2008 and Rainbow Bee-eater in 1980. While some of these species would be expected to use the study area on occasions, and some of them may do so regularly or may be resident whilst in Australia, the study area does not provide important habitat for an ecologically

significant proportion of any of these species.

Flora species

A total of thirteen significant flora species were identified as having potential to occur within the study area. Species with medium or higher likelihood of occurrence include:

- Australian Piert (EPBC Act – vulnerable)
- Rigid Spider-orchid (EPBC Act – endangered, DEPI – vulnerable)
- Wimmera Rice-flower (EPBC Act – critically endangered, DEPI – endangered, FFG Act listed)
- Floodplain Rustyhood (EPBC Act – vulnerable, DEPI – vulnerable, FFG Act listed)
- Slender Darling-pea (EPBC Act – vulnerable, DEPI – endangered, FFG Act listed)
- Bramble Wattle (DEPI – rare)
- Buloke (FFG Act listed)
- Buloke Mistletoe (DEPI – vulnerable)
- Leafless Bluebush – (DEPI – poorly known)
- Downy Swaison-pea (DEPI – endangered, FFG Act listed).

Of the threatened flora species listed above, two were recorded within the study area. These were:

- Buloke
- Buloke Mistletoe.

The remaining species not recorded during ecological assessments and are considered unlikely to occur.

Fauna species

A total of twenty-two EPBC Act and/or FFG Act listed fauna species were identified as having potential to occur within the study area. The species with a medium or higher likelihood of occurrence include:

- Eastern Great Egret (DEPI – vulnerable, FFG Act listed)
- Bush Stone-curlew (DEPI – endangered, FFG Act listed)
- Black-eared Cuckoo (DEPI – near threatened)
- Spotted Harrier (DEPI – near threatened)
- Brown Treecreeper (south eastern ssp.) (DEPI – near threatened)
- Black Falcon (DEPI – vulnerable)
- Hooded Robin (DEPI – near threatened, FFG Act listed)
- Eastern Bearded Dragon (DEPI – vulnerable).

Of the eight threatened fauna species listed above, four were recorded within the study area during the flora and fauna assessment and bird utilisation surveys (see below).

These were:

- Spotted Harrier
- Black Falcon
- Hooded Robin
- Brown Treecreeper (south-eastern ssp).

The vulnerability of these species to impacts from construction and operation of the Murra Warra Wind Farm are detailed below.

Of the remaining four species that were not recorded within the study area during the ecological assessment; the Eastern Great Egret, Bush Stone-curlew and Black-eared Cuckoo have a medium likelihood of occurrence, and the Eastern Bearded Dragon has a high likelihood of occurrence in the study area. The Eastern Bearded Dragon was recorded within Barrat Flora Reserve during the ecological assessment but not in the study area. Similarly, the Black-eared Cuckoo has been also been previously recorded in the Barrat Flora and Fauna Reserve. The Eastern Great Egret is usually found in terrestrial wetland, estuarine and wet grassland habitats particularly permanent well-vegetated water bodies but also freshwater meadows. Whilst the Eastern Great Egret may occur within farm dams, dams located within the study area are disconnected from water supply and are unlikely to hold sufficient water to provide habitat for this species.

The Bush Stone-curlew generally occurs on woodland habitats and as a result, may inhabit larger woodland remnants containing woody debris.

Birds

Spotted Harrier

The Spotted Harrier inhabits open and wooded country of inland and sub-inland Australia, where they hunt over flat or undulating country with low vegetation cover. The Spotted Harrier is most commonly observed over the Murray Valley with occasional visits to coastal Victoria.

Black Falcon

The Black Falcon primarily occurs in arid and semi-arid areas in the north, north-west and west of Victoria, however can be forced into more coastal areas by droughts and subsequent food shortages. The Black Falcon predominantly occurs in woodlands, open country and around terrestrial wetland areas, including rivers and creeks and hunts mostly over open plains and undulating land with large tracts of low vegetation.

Hooded Robin

The Hooded Robin occupies a range of open woodlands including those dominated by Eucalypts, Acacias and Callitris with an understory of smaller trees, shrubs and grasses.

Brown Treecreeper (south-eastern ssp.)

The Brown Treecreeper (south-eastern ssp.) is often observed feeding on insects as it spirals up trees or when hopping along the ground on fallen litter. It generally inhabits open Eucalypt forests, woodlands and Mallee, often where there are stands of dead trees.

Bird utilisation surveys

Preliminary and detailed bird utilisation surveys were undertaken at a variety of sites within the proposed wind farm site. During the detailed bird utilisation surveys at 24 sites, a total of 55 species were recorded including open country and generalist species (such as the Australian Magpie and Galah). Introduced species were commonly encountered at all sites with the Common Starling and House Sparrow being two of the most frequently recorded species. Three significant species were recorded:

- Spotted Harrier was recorded at three sites. A single bird was observed each time
- Brown Treecreeper was relatively common recorded at various sites during all survey period. No Brown Treecreepers were recorded in open paddock sites
- Hooded Robin was recorded at three woodland sites.

The Black Falcon was recorded to the south of the proposed wind farm development during the initial flora and fauna assessment, however it was not recorded during subsequent surveys.

Where possible, Murra Warra Wind Farm has avoided woodland habitat and removal of scattered trees. However construction and operation of aerial infrastructure, including turbines and overhead powerlines will result in an increased risk of collision by birds and bats. The likelihood of significant impacts to threatened species of birds and bats is considered very low, as the listed species recorded or potentially occurring on the site are woodland dependent species unlikely to fly within rotor swept height. Collision risk modelling undertaken by Biosis Pty Ltd for the project found that while there is some potential for threatened species such as Black Falcon, to collide with the turbines, the number of collisions would be very low, and is therefore unlikely to pose an ongoing threat to populations.

Targeted surveys

Targeted surveys for Golden Sun Moth and Striped Legless Lizard were carried out to determine their potential presence in the study area and vulnerability to impacts.

Golden Sun Moth

Targeted surveys for Golden Sun Moth were undertaken on four separate survey dates during favourable survey conditions in October and November 2014. No Golden Sun Moth were observed to be flying at the nearest reference site, the Nhill Golden Sun Moth Reserve during the reference site check. Based on these findings, the study area is considered unlikely to support a

current population of Golden Sun Moth.

Striped Legless Lizard

Targeted surveys for Striped Legless were undertaken during September to December 2015 during favourable survey conditions and in accordance with *Survey Guidelines for Australia's Threatened Reptiles* (DSEWPaC 1999). Striped Legless Lizard habitat was identified within patches of Plains Savannah. These areas consist of linear strips of remnant grassland along roadsides and in road reserves, and fragmented grassland patches within adjacent farmland.

No Striped Legless Lizards were recorded on site during any of the targeted survey tile checks on eight separate dates. Based on these findings, the site is considered unlikely to support a current Striped Legless Lizard population.

Bat utilisation surveys

Preliminary bat acoustic surveys were conducted at ten sites within the proposed site over two weeks during late May and early June 2013. Further surveys were conducted at 24 sites in late spring/early summer 2013, summer 2014 and autumn 2014. A total of nine species were recorded across the study area including one significant species; the Yellow-bellied Sheath-tailed Bat which was recorded during a preliminary bat acoustic surveys to the south of the wind farm boundary (FFG listed). No further calls of this species were recorded during detailed surveys within the wind farm. Based on these findings, the Yellow-bellied Sheath-tailed Bat is considered an infrequent visitor to the general area including the study area.

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.

The following listed threatening process affecting these species may be exacerbated by the proposed development without the implementation of mitigation measures:

- Habitat fragmentation as a threatening process for fauna in Victoria
- Invasion of native vegetation by 'environmental weeds' The spread of *Phytophthora cinnamomi* from infected sites into parks and reserves including roadsides, under the control of a state or local government authority.
- Use of *Phytophthora cinnamomi*-infected gravel in construction of roads.

The existing landscape of the proposed Murra Warra Wind Farm is highly fragmented due to the long history of dryland agriculture and broad scale clearing activities that have taken place since the 1840s. In addition, only a small amount of native vegetation (less than 2ha) is to be removed for the project. For these reasons, it is considered that the project is not likely to significantly increase the level of fragmentation, or impact upon fauna movements.

Mitigation measures would be implemented during construction to ensure that these threatening processes are not exacerbated.

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.

Flora species

Loss of native vegetation will involve removal of habitat for common flora species and significant species including Buloke. This species was recorded as widespread and at several locations

throughout the study area respectively. Specifically, the project may require the removal of one Buloke scattered tree and potential minor trimming of one or more Buloke trees along Kewell North South Road where the powerline crosses. Due to the minimal extent of native vegetation removal (<2ha across the study area), impacts to this species are expected to be negligible or minor.

Ecological communities

The total extent of native vegetation removal required for the project would be less than 2 ha. Due to the minimal extent of native vegetation removal, impacts to ecological communities including Plains Savannah EVC 826 and Plains Woodland EVC 803, are expected to be negligible or minor. Buloke Woodlands are present within the study area, however the project will not impact on any areas of this EPBC Act listed community.

Fauna species

As a result of the mitigation measures to be implemented by Murra Warra Wind Farm, no significant impacts to threatened or migratory fauna species are considered likely.

The threatened birds recorded in the study area including Brown Treecreeper, Hooded Robin, Black Falcon and Spotted Harrier are woodland dependent species are unlikely to fly within rotor swept height and therefore impacts from construction and operation of aerial infrastructure including turbines and overhead powerlines are considered very low. Monitoring of impacts to these birds would be managed through implementation of an appropriate Bat and Avifauna Management Plan. Loss of native vegetation will involve removal of habitat for these birds, however due to the minimal extent of removal; impacts to these species are expected to be negligible or minor.

Similarly, the listed species with the potential to occur in the study area including Bush Stone-curlew, Black-eared Cuckoo and Eastern Bearded Dragon are also woodland dependant species. Due to the total extent of native vegetation to be removed, impacts to these species are expected to be negligible or minor. The Eastern Great Egret is most prominently found in terrestrial wetland, estuarine and wet grassland habits as well as permanent well-vegetated channels and larger dams. Dams within the study are now disconnected from a water supply and are therefore unlikely to hold sufficient water as habitat for this species.

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

NYD No Yes If yes, please briefly describe.

The proposed wind farm development layout has been designed, where possible, to avoid areas of native vegetation and scattered trees. As it stands, native vegetation impacts are limited to minor areas where access is required through road reserves.

Should the wind farm and associated infrastructure be altered, the following assessments would be undertaken:

- Determine whether the vegetation qualifies as a listed ecological community
- Undertake a habitat hectare assessment to determine any offset requirements (under the Victorian Biodiversity Assessment Guidelines)
- Targeted flora assessment in any areas of suitable habitat

Additional mitigation measures

Murra Warra Wind Farm would adopt a range of measures to mitigate possible impacts to on-site ecological values. These would be selected and applied after consideration of the location and extent of works and would be detailed in an Environmental Management Plan. The Environmental Management Plan would cover pre-construction, construction and post-construction phase activities. With implementation of standard mitigation measures, the threatening processes, detailed in the section above, are not expected to significantly impact vegetation communities or listed flora and fauna species. Mitigation measures during construction would include:

- protection of all areas of retained native vegetation including scattered trees and areas of environmental sensitivity. These areas should be fenced and marked as no-go zones
- communication with construction personnel regarding environmental constraints (through the workforce induction)
- prevent access to no-go zones – including vehicles, construction personnel, equipment

- and stockpiles
- if trees are removed or lopped, they should be incorporated into nearby reserves where they can continue to provide fauna habitat
- maintenance of fenced off no-go zones.

Mitigation measures during operation would include:

- site rehabilitation and revegetation works
- public education of biodiversity values within the wind farm site.

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

The flora and fauna assessment includes consideration of vegetation impacts associated with road improvement works.

Refer to **Murra Warra Wind Farm Flora and Fauna Report**

13. Water environments

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

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

It is expected that during the two year construction period there would be a requirement for approximately 0.16 GI/year (primarily for dust suppression and road construction), to be supplied from the existing Wimmera Regional Rural supply in combination with the use of on-site dams. Overall, it is considered that operational water requirements are insignificant.

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

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

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.

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

NYD No Yes If yes, specify which water environments.

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

NYD No Yes If yes, please specify.

Could the project affect streamflows?

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

Could regional groundwater resources be affected by the project?

NYD No Yes If yes, describe in what way.

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

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

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

NYD No Yes If yes, describe in what way.

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.

Is mitigation of potential effects on water environments proposed?

NYD No Yes If yes, please briefly describe.

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

There are no designated waterways within the perimeter of the project site.

The study area is generally very flat, and is without any major natural drainage lines. It is situated between the Wimmera River and the Yarriambiack Creek, which are both intermittent, north flowing streams that terminate in lakes. In the past, water was supplied to farm dams, troughs and tanks within the study area using a series of open channels which were decommissioned as part of the Wimmera Mallee Pipeline Project between 2006 and 2010.

Ground water levels are in the order of 30m below ground surface and therefore the proposed quarry depth of less than 10m would have negligible impact on regional groundwater uses and levels

Water use associated with the construction would be considerably less than 1GI/year and water would be sourced from the existing Wimmera Regional Rural supply in combination with the use of on site dams. Water use during project operations would be insignificant.

A number of open channels from the decommissioned water supply system exist within the project site. These are not significantly affected by the project and subsequent to the implementation of the Wimmera Murray Pipeline Project they are obsolete and are being filled in on an ad hoc basis. Discussions with GWM Water have indicated they will consent to the project access tracks crossing these remaining structures.

Refer to **Murra Warra Wind Farm Geology and Hydrology Report** for further details.

14. Landscape and soils

Landscape

<p>Has a preliminary landscape assessment been prepared? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please attach. Refer to Preliminary Landscape and Visual Assessment for further details.</p>
<p>Is the project to be located either within or near an area that is:</p> <ul style="list-style-type: none"> • Subject to a Landscape Significance Overlay or Environmental Significance Overlay? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, provide plan showing footprint relative to overlay. • Identified as of regional or State significance in a reputable study of landscape values? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please specify. • Within or adjoining land reserved under the <i>National Parks Act 1975</i> ? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please specify. • Within or adjoining other public land used for conservation or recreational purposes ? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please specify.
<p>Is any clearing vegetation or alteration of landforms likely to affect landscape values? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.</p>
<p>Is there a potential for effects on landscape values of regional or State importance? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Please briefly explain response.</p>
<p>Is mitigation of potential landscape effects proposed? <input checked="" type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.</p> <p>Localised planting and screening of infrastructure such as the substation and offers of screening plantation to local residents located within 3km would be offered (if required under the planning permit).</p>
<p>Other information/comments? (eg. accuracy of information)</p> <p>No landscape significance overlays exist within 10km of the project site.</p> <p>There are a total of 26 dwellings located within 3kms of the proposed wind turbine locations. Within approximately 1km distance from turbines, there is one dwelling and three former dwellings. Three of these dwellings are owned by landowners associated with the project, and one is owned by a non associated landowner. The three former dwellings have not been occupied for many years and are in an advanced state of dereliction. RES will have agreements with the owners of these structures for them to be removed prior to the commencement of construction. The dwelling which is currently occupied is owned by an associated landowner. A preliminary landscape assessment has been carried out and from this assessment it was concluded that the landscape surrounding the wind farm, as well as the landscape in the broader view shed, has a low visual sensitivity to change and represents a highly modified and productive agricultural landscape which is common to the Wimmera landscape region.</p> <p>Overall, the landscape assessment determined that the visual impact of the wind farm is likely to be low from publically accessible locations and that the proposed wind farm:</p> <ul style="list-style-type: none"> • would have a negligible visual impact on the principal rural townships of Horsham, Dimboola and Warracknabeal • would result in no significant impact on views from highways (including the Henty and Borung Highways) • would result in no significant impact on views from local roads; and • would result in no significant visual impact from scenic areas, public reserves and recreational areas including any available long distant views from Mount Arapiles and the Grampians National Park. <p>Localised planting and screening of infrastructure such as the substation and offers of screening</p>

plantation to local residents located within 3km would be offered (if required under the planning permit).

Refer to **Preliminary Landscape and Visual Assessment** for further details.
Assessment

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.

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

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

Due to the site location and topography, the land is highly stable and no significant geotechnical risks have been identified.

Acid sulphate soils have not been identified on the project site.

Project activities are not expected to cause significant erosion and potential for erosion would be managed through the implementation of an Environmental Management Plan.

Refer to **Geology and Hydrology Report** for further details.

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.

It is estimated that over the two year construction phase of the project, there would be approximately 22,630 vehicle movements mainly affecting sparsely populated areas. The key routes into the site are expected to be from the Geelong Port via Horsham along major arterial roads such as the Princes Highway, Princes Freeway, Western Freeway and Western Highway or from Portland or South Australia via the main arterial network. Local roads would be used to travel the remainder of the distance to site from Dimboola, such as Minyip-Dimboola Road, Ailsa Wheat Road and Barret Road. The utilised sections of local roads would be upgraded to a suitable standard for use by the Murra Warra Wind Farm project. The amount of heavy vehicle movements on local roads has been reduced significantly by use of an on-site quarry to provide construction materials rather than sourcing these materials from a quarry remote from the site.

During the operational phase it is estimated that there would be up to 15 permanent staff on site likely to commute daily from population centres. In addition to this there would be 2-3 truck deliveries per week.

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.

Traffic volumes would increase during the construction phase of the Murra Warra Wind Farm however this is would be limited to a period of approximately 26 months. In the peak of construction, approximately 170 vehicles deliveries (a mix of truck and light vehicles) are expected per day. Typically this would comprise up to 60 trucks per day and approximately 110 light vehicles. During the second half of the construction period (i.e. for year 2), truck numbers would decrease to between 5 and 10 trucks per day and light vehicles would be up to 20 vehicles per day.

It is expected that the amenity impacts arising from the increase in traffic can be addressed through standard construction management measures such as controlled working hours, selection of local traffic routes during various phases of construction, selection of access track construction materials and road watering. Further to this and where possible, materials would be sourced from a quarry within the perimeter of the site to minimise the number and duration of vehicle movements as much as possible.

After completion of the construction phase and commissioning works, the operational traffic volumes at the wind farm would be insignificant and similar in nature to the current vehicle movements around the area.

Noise from the proposed turbines would be subject to a full impact assessment compliant with industry standard guidelines, specifically New Zealand Standard NZS6808:2010, Acoustics – Wind Farm Noise. A preliminary noise assessment has been undertaken for the project and this indicates that the relevant standards can be met. A detailed noise assessment would be undertaken as part of the planning permit process. Compliance with wind farm noise guidelines is compulsory and as a result, significant effects on amenity of residents are unlikely to occur.

Construction works, including operation of the rock crushing and concrete batching plants would be managed in accordance with a Construction Environmental Management Plan. The Construction Environmental Management Plan would include measures to monitor and control environmental risks. In relation to noise it would address the EPA Victoria Guidelines for Major Construction Sites (1996) and the EPA Victoria Noise Control Guidelines (2008).

Further to this, air quality and noise management for the proposed quarry would be in accordance with the approved quarry Work Plan.

Is there a potential for exposure of a human community to health or safety hazards, due to

<p>emissions to air or water or noise or chemical hazards or associated transport? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe the hazards and possible implications.</p>
<p>Is there a potential for displacement of residences or severance of residential access to community resources due to the proposed development? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe potential effects.</p>
<p>Are non-residential land use activities likely to be displaced as a result of the project? <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, briefly describe the likely effects.</p> <p>Of the 4,250ha project site only around 1.9% of this area would be impacted by permanent wind farm infrastructure. The impacts on the predominant land uses of broad acre cropping and grazing are considered to be minor with these activities able to continue during the project construction and operation phases. The project is not considered likely to threaten the viability of agricultural enterprises but instead has the potential to strengthen some agricultural businesses commercially by providing complementary income to landowners associated with the project. The project has been designed with extensive input from landowners with the aim to minimise the impact on farming activities and maintain agricultural efficiencies.</p>
<p>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? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe the potential effects.</p>
<p>Is mitigation of potential social effects proposed? <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please briefly describe.</p> <p>It is expected that the amenity impacts arising from the increase in traffic can be addressed through standard construction management measures such as controlled working hours, selection of local traffic routes during various phases of construction, selection of access track construction materials and road watering. No further mitigation measures are expected to be required for the project.</p>
<p>Other information/comments? (eg. accuracy of information) Air quality and noise management for the proposed quarry would be in accordance with the approved quarry Work Plan.</p> <p>Refer to Traffic and Transport Assessment for further details.</p>

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. Consultation to date has occurred with the following organisations:
- Office of Aboriginal Affairs Victoria
 - Barenji Gadjin Land Council (Registered Aboriginal Party).

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

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

A desktop Cultural Heritage Assessment including a site investigation has been completed by Archaeology At Tardis.

The desktop assessment has demonstrated that:

- there are no registered Aboriginal cultural heritage places within the activity area
- there are no known areas of cultural heritage sensitivity.

A voluntary CHMP would be prepared for the project, in order to manage any Aboriginal cultural heritage risk relating to the activity. Although it is considered unlikely that there are any Aboriginal cultural heritage places in the activity area with above low scientific significance, an approved CHMP would be used to manage any Aboriginal cultural heritage issues that may occur throughout the project duration.

For historic heritage, the desktop assessment demonstrated that:

- there are no registered historic places within the activity area
- it is reasonably possible that both archaeological and extant historic cultural heritage is present – these areas are generally locations of former homesteads which have been removed
- there is potential for the project to impact unknown historic cultural heritage, although the potential is considered to be low.

A pre-construction survey will be undertaken in all areas of archaeological and extant historical cultural heritage potential, particularly in these former homestead areas. This will be carried out by a heritage advisor. The Construction Environmental Management Plan for the project would include recommendations and detailed management measures in the event that historic heritage is discovered during construction.

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

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.

Is mitigation of potential cultural heritage effects proposed?

- NYD No Yes If yes, please briefly describe.

A voluntary Cultural Heritage Management Plan would be prepared for the project. It is expected that this plan would be developed after the project had obtained planning consent.

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

Refer to **Desktop Cultural Heritage Assessment** for further details.

16. Energy, wastes & greenhouse gas emissions

<p>What are the main sources of energy that the project facility would consume/generate?</p> <p><input checked="" type="checkbox"/> Electricity network. If possible, estimate power requirement/output 1289GW/h per year.</p> <p><input type="checkbox"/> Natural gas network. If possible, estimate gas requirement/output</p> <p><input checked="" type="checkbox"/> Generated on-site. If possible, estimate power capacity/output 1289GW/h per</p> <p><input type="checkbox"/> Other. Please describe.</p> <p>Please add any relevant additional information.</p>
<p>What are the main forms of waste that would be generated by the project facility?</p> <p><input checked="" type="checkbox"/> Wastewater. Describe briefly.</p> <p><input type="checkbox"/> Solid chemical wastes. Describe briefly.</p> <p><input type="checkbox"/> Excavated material. Describe briefly.</p> <p><input type="checkbox"/> Other. Describe briefly.</p> <p>Please provide relevant further information, including proposed management of wastes. Wastewater, such as from office toilets would be discharged to septic tank. Volumes are considered negligible.</p>
<p>What level of greenhouse gas emissions is expected to result directly from operation of the project facility?</p> <p><input checked="" type="checkbox"/> Less than 50,000 tonnes of CO₂ equivalent per annum</p> <p><input type="checkbox"/> Between 50,000 and 100,000 tonnes of CO₂ equivalent per annum</p> <p><input type="checkbox"/> Between 100,000 and 200,000 tonnes of CO₂ equivalent per annum</p> <p><input type="checkbox"/> More than 200,000 tonnes of CO₂ equivalent per annum</p> <p>Please add any relevant additional information, including any identified mitigation options.</p> <p>The project would lead to an overall net reduction in greenhouse gas emissions of over 1M tonnes per year.</p>

17. Other environmental issues

<p>Are there any other environmental issues arising from the proposed project?</p> <p><input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe.</p>
--

18. Environmental management

<p>What measures are currently proposed to avoid, minimise or manage the main potential adverse environmental effects? (if not already described above)</p> <p><input checked="" type="checkbox"/> Siting: Please describe briefly</p> <p>The site has been chosen because it has excellent characteristics for a high performing wind energy facility but low adverse environmental impacts. Potential impacts on, on local communities, ecology, heritage, landscape and amenity values were considered in the selection of the site including the following considerations:</p> <ul style="list-style-type: none"> • The project is located in heavily modified cleared agricultural land and is wholly within the farming zone. Low impact on native vegetation and endangered or vulnerable ecological communities. • Availability of grid. 220kV Horsham to Mildura runs directly through the site. No requirement to construct further transmission corridor reducing impact on native vegetation. • No areas of statutory heritage on site. Absence of natural features which would increase the risk of heritage impacts. • No special landscape characteristics, SLOs or relevant ESOs or recreational areas within
--

the 20km view shed.

- Low community impact. Less than 26 dwellings exist within 3km of the project with 13 of those owned by families associated with the project. Nearest township is approximately 15 km north of the site.

Design: Please describe briefly

- Total native vegetation removals of less than 2ha.
- Avoidance of areas of sensitive habitat.
- Siting turbines at least 1.5km from any inhabited non-involved dwellings.
- Proposed to quarry significant amount of materials for construction from an on-site quarry reducing traffic impacts on surrounding towns and communities.

Environmental management: Please describe briefly.

- Environmental Management Plans will be implemented during the construction and operations phases of the project to monitor and control residual environmental issues associated with the project.

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.

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.

Additional studies which have been conducted for the project include:

- Preliminary Noise Impact Assessment.
- Preliminary Shadow Flicker Assessment.

Has a program for future environmental studies been developed?

No Yes If yes, briefly describe.

In addition to the studies provided in support of this referral, the following future studies would be undertaken to support the planning application:

- a detailed Landscape and Visual Impact Assessment including assessment from dwellings
- a detailed Shadow Flicker Assessment
- a detailed Noise Assessment.

RES Australia is committed to reducing the impact to native vegetation and as a result, further work is proposed to be undertaken to reduce the impact to native vegetation removal. Once the design has been confirmed (layout freeze), all environmental reports would be updated to reflect the updated design.

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.

A range community and stakeholder engagement activities have occurred in relation to the proposed Murra Warra Wind Farm development since the introductory meetings with Horsham and Yarriambiack Shire Councils dating back to 2010. A summary of the community and

stakeholder engagement activities undertaken to date are provided below:

- 2010: letter to local stakeholders
- 2012: letter drop to local residents and house survey undertaken
- 2013: presentation to Horsham and Yarriambiack Shire Council members and senior officers
- 2013: consultation strategy sent to Councils for comment
- 2013: site visit with Horsham and Yarriambiack Shire Council planning officers
- 2014: presentation to Horsham and Yarriambiack Shire Council members and senior officers on economic benefits case
- 2014: update letter to stakeholders
- 2014: various meetings with local MP, DEPI, VicRoads and the Registered Aboriginal Party representative regarding findings of preliminary investigations undertaken
- 2015: update to Councils
- 2015: presentation to Wimmera Development Association and local branch of Engineers Australia
- 2015: site visit with DELWP, DEDJTR and Horsham and Yarriambiack Shire Council planning officers
- 2015: aviation report completed and discussions held with local aerodrome operators, aviation clubs, agriculture operators, CFA, RAAF. Final report currently with CASA and ASA for comment
- February 2016: planning reports available online to all major stakeholders including DELWP, VicRoads, AAV, RAP and Wimmera CMA
- February 2016: public web site launched (see below for URL)
- February 2016: kitchen table meetings with all residents located within 3km of a turbine, and adjoining landowners
- February 2016: letter drop to dwellings located within 3-5km of the wind farm, updating them on the project and inviting them to scheduled public drop in sessions
- February 2016: public drop in sessions at Horsham, Sailors Home Hall and Warracknabeal
- March/April 2016: newsletter circulated to all stakeholders and members of the public who had left expressions of interest
- April 2016: second public drop in sessions at Horsham, Sailors Home Hall and Warracknabeal.

A website for the project has been established at www.murrawarra-windfarm.com.

Has a program for future consultation been developed?

NYD No Yes If yes, briefly describe.

At lodgement of the planning report, all planning documentation will be made available on the web site and in public buildings locally.

Authorised person for proponent:

I, MATT REDOELIC.....(full name),
DIRECTOR.....(position), confirm that the information
contained in this form is, to my knowledge, true and not misleading.

Signature 

Date 7 June 2016

Person who prepared this referral:

I, DAVID HUETT.....(full name),
INDUSTRY DIRECTOR.....(position), confirm that the information
contained in this form is, to my knowledge, true and not misleading.

Signature 

Date 7 June 2016