

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

REFERRAL FORM

Preamble

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 the provision of relevant information in accordance with the *Ministerial Guidelines for Assessment of Environmental Effects* (Seventh Edition, 2006), in particular by proponents. 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 Department of Sustainability and Environment (DSE) 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 a font colour of the 'cross' to black and provide additional information and explanation where requested.
- At least 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 and honestly reflect the potential for adverse environmental effects. A Referral will be accepted for processing once DSE is satisfied that it has been completed appropriately.
- Potentially significant effects should be described in sufficient detail for a reasonable conclusion to be drawn whether the project could pose a significant risk to those assets. Responses should document:
 - 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, supporting reports, etc. 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.
- A completed form would normally be between 15 and 30 pages in length.
- The form should be completed in MS Word and not handwritten.

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

Postal address

**Minister for Planning
PO Box 500
EAST MELBOURNE VIC 3002**

Couriers

**Minister for Planning
Level 17, 8 Nicholson Street
EAST MELBOURNE VIC 3002**

Submission of an electronic copy of the Referral via email to ees.referrals@dse.vic.gov.au is encouraged, at the same time as and in addition to the hardcopy submitted to the Minister. 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:	Renewable Energy Systems Australia Pty Ltd (RES Australia)
Authorised person for proponent:	Colin Liebmann
Position:	Managing Director
Postal address:	PO Box 1274, Crows Nest, NSW 1585
Email address:	colin.liebmann@res-ltd.com
Phone number:	(02) 9431 7602
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Person who prepared Referral:	Sedat Erol
Position:	Developer
Organisation:	RES Australia Pty Ltd
Postal address:	PO Box 1274, Crows Nest, NSW 1585
Email address:	sedat.erol@res-ltd.com
Phone number:	(02) 9431 7606
Facsimile number:	(02) 9431 7699
Available industry & environmental expertise: (areas of 'in-house' expertise & consultancy firms engaged for project)	Environmental Resources Management Australia Pty Ltd - Landscape / Visual, Cultural Heritage, Community Perceptions Survey Brett Lane & Associates Pty Ltd - Ecology (Flora and Fauna)

2. Project – brief outline

Project title:	Ararat 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)	<p>The proposed Ararat Wind Farm site is located in south west Victoria approximately 7 km north east of Ararat, as shown in Annexure 1 attached to this form. The subject site is comprised of two areas of land, that are located north and south of the Pyrenees Highway, with wind turbines in the north proposed approximately 3 km from proposed wind turbines in the south.</p> <ul style="list-style-type: none"> • That part of the subject site north of Pyrenees Highway is generally contained within the following coordinates – 676046, 5883793; 676472, 5885105; 680602, 5884629; 681773, 5881577; 679248, 5880173. • That part of the subject site south of Pyrenees Highway is generally contained within the following coordinates – 677655, 5878140; 679912, 5880736; 684847, 5878322; 687731, 5876567; 688283, 5875689, 688139, 5873538; 681499, 5873206; 679843, 5872930; 678094, 5874805; 677548, 5876253.

Short project description (few sentences):

RES Australia proposes to develop a wind farm, comprising of approximately 76 turbines and associated on-site infrastructure in south west Victoria.

The preliminary assessments undertaken to date have not identified any significant visual, ecological, or archaeological issues that can not be managed through further investigation and as such it is considered that this project will not necessitate an Environment Effects Statement (EES) pursuant to the *Environment Effects Act 1978*. The proposed Ararat Wind Farm has potential to impact upon the environment, landscape and community, however, it is anticipated that these impacts can be identified and mitigated against through the planning permit process, pursuant to the *Planning & Environment Act 1987*.

3. Project description**Aim/objectives of the project** (what is its purpose / intended to achieve?):

The aim of this project is to develop a wind energy facility, producing approximately 684GW hours per year of renewable electricity near Ararat in south west Victoria. It is intended that this wind farm will supplement Victorian and National energy needs, while reducing Australia's dependence upon fossil fuels and hence greenhouse gas emissions.

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

RES Australia Pty Ltd has selected this site as a suitable location for the development of a wind energy facility based on the following criteria:

- Suitable wind resource;
- Supportive landholders;
- Adequate distance from nearby dwellings (non-stakeholders);
- Adequate distance from sensitive ecological, historical and visual locations;
- Proximity to electricity network connection;
- Suitable land in terms of:
 - Terrain and geology;
 - Land area;
 - Compatible land uses;
 - Zoning and overlay controls in the relevant planning schemes;
 - Existing ecological conditions;
 - Freehold land; and
 - Access to the site.

The site was evaluated against the above listed criteria and the results indicated that the site was suitable for further investigation.

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

The proposed Ararat Wind Farm will contain approximately 76 turbines with a maximum height (blade tip) up to 135m. The proposed turbines will have a capacity of 2 MW – 3 MW each (the exact turbine model is yet to be determined), resulting in an installed maximum capacity of approximately 228MW. Annexure 1 provides an overview of the project area and the footprint of the proposed Ararat Wind Farm site. The total site area will be in the order of 5, 272 hectares, although the infrastructure of the project will be contained in an area which is less than 1% of the site (52 hectares). As the location of individual turbines will vary within the footprint of the site according to the results of the specialist environmental assessments, indicative turbine locations have been identified at this stage (see Annexure 4).

The other main components of the proposed Ararat Wind Farm are as follows:

- grid connection infrastructure (i.e. substation and switchyard);
- on-site access tracks;
- on-site cabling (predominantly underground);
- 4 x permanent wind monitoring masts (anemometers); and
- monitoring and maintenance buildings.

<p>Ancillary components of the project (eg. upgraded access roads, new high-pressure gas pipeline; off-site resource processing):</p> <p>Vehicular access between the public roads and each of the sites may need to be upgraded to accommodate construction traffic, however, the requirement for and the extent of these works will be determined during the next phase of investigation.</p> <p>The Ararat Wind Farm is proposed to be connected to the 220 kV Ballarat - Horsham transmission line located approximately 15km north of the site. The route for this grid connection is yet to be determined and may form part of a separate planning permit application if planning approval is required.</p>
<p>Key construction activities:</p> <p>Key construction activities of the wind farm will be undertaken in two phases. These phases and associated activities include:</p> <ul style="list-style-type: none"> • Phase 1: Civil Construction Phase, i.e. the construction of access tracks, foundations, underground cabling, etc.; and • Phase 2: Installation Construction Phase, i.e. the installation of towers, turbines, substations, etc., and site rehabilitation works (i.e. replacement of topsoil and re-seeding). <p>The total construction phase will take approximately eighteen months to complete.</p>
<p>Key operational activities:</p> <p>The key operational activities are commissioning (i.e. conducting safety checks, networks tests, etc.) and operations, including maintenance.</p> <p>Commissioning activities will last approximately 6 months and the project is expected to have an operational life time of 25 years.</p>
<p>Key decommissioning activities (if applicable):</p> <p>The key decommissioning activities are to remove infrastructure (i.e. turbines) and to rehabilitate civil works (i.e. turbine foundations). Access tracks would remain in-situ for the benefit of the landowner.</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>Is the project related to any other past, current or mooted proposals in the region?</p> <p><input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please identify related proposals.</p> <p>The earlier version of this proposal, comprising approximately 50 wind turbine locations was previously referred to the Minister for Planning in November, 2007. On 14 January, 2008 the Minister determined that an EES was not required. The revised proposal, now comprising approximately 76 wind turbine locations is being re-notified to re-confirm the Minister's earlier determination.</p>

4. Project alternatives

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

RES Australia Pty Ltd has undertaken investigations throughout Victoria into various other sites for the development of wind farms. The subject site at Ararat was chosen due to studies proving it to be a location with excellent potential to provide a ready and constant supply of wind generated energy. Other potential sites are also under investigation for future development and as such remain confidential at this stage.

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

The turbine layout has not been finalised at this stage and will take into consideration the results of the detailed studies undertaken in the next phase of work.

The following assessments will influence the final turbine layout:

- Ecological Assessment;
- Noise Assessment;
- Heritage Assessment;
- Landscape & Visual Assessment;
- Electromagnetic Interference Assessment;
- Land Capability Assessment; and
- Any results / suggestions from community consultation.

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:

At this stage the route for the connection between the proposed wind farm and the 220 kV Ballarat - Horsham transmission line is not known. Accordingly, once a route has been finalised, if a planning permit is required for the connection a separate application will be lodged. It is noted that this is a commonly accepted approach to grid connections associated with wind farms in Victoria.

6. Project implementation

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

RES Australia Pty Ltd

Implementation timeframe:

It is anticipated that this project will be operational by 2011 with a construction program covering 18 months. This timeframe is dependent on the receipt of a planning permit during 2009/10 and commercial negotiations relating to the supply of wind turbines.

Proposed staging (if applicable):

This is not a staged project.

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):

As previously stated, the proposed Ararat Wind Farm site comprises two areas of land (north and south of the Pyrenees Highway), with wind turbines in the northern part proposed to be located approximately 3 kilometres from wind turbines in the southern part of the site. The subject site is located 7km north east of Ararat (which according to the 2006 Census has a population of 7,169) and approximately 20 kilometres to the southeast of Stawell (which has a population of 5,877). There are other smaller townships within the vicinity of the subject site, including Crowlands, located approximately 6km to the northeast and Elmhurst, located approximately 13km to the northeast.

The site is located within the Central Uplands and Goldfields Bioregion of Victoria. The topography of this area is dominated by rolling plains and low hills. The area is characterised by fragmented native forests and woodlands, mostly on the relatively poor soils. The site drains both north into the Wimmera River and south into the Hopkins River. Several large mountains surround the site including Mt Langi Ghiran, Mt Boswell and Ben Nevis.

The site lies on sedimentary geology on a series of ridges that formerly supported forest. These ridges range in elevation between 350m and 500m. The higher ridge tops have been cleared of their original native vegetation and have been sown to exotic pasture grasses. The existing predominant land use of the site is sheep grazing.

Soils appear to be highly erodible evident by several large erosion gullies. Many of those gullies have had remedial/stabilisation activity, including tree planting and fencing. This has been in the form of extensive indigenous revegetation works, involving over 120 ha of land that has been fenced off and excluded from grazing. Most of the revegetation has been placed in groundwater recharge areas on and close to the tops of the ridges.

The most extensive vegetation of the upper ridges is exotic pasture and weed species. On the lower slopes, scattered remnant trees have been retained and, in places, small patches of remnant woodland occur. The most extensive example of wooded remnant is found within the southern section of the site (north of Warrak Road and within the unmade Buckingham Road reserve). This vegetation comprises Grassy Dry Forest and Alluvial Terraces Herb Rich Woodland Ecological Vegetation Community's (EVC's). This area forms a core habitat area (>50 ha) contiguous with the Warrak Road reserve.

Ground level photos are included in the attached Detailed Fauna and Flora Assessment at Annexure 3.

Site area (if known):

The subject site of the proposed Ararat Wind Farm (including all associated property boundaries) comprises an area of approximately 1,214 hectares, located to the north of the Pyrenees Highway and approximately 4,058 hectares, located to the south of the Pyrenees Highway. Within the site area infrastructure of the project will be contained in an area which is less than 1% of the site (52 hectares).

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

Current land use and development:

The proposed Ararat Wind Farm study area and surrounds are primarily used for agricultural purposes (sheep grazing) with associated low density rural dwellings.

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

As above.

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

The proposed Ararat Wind Farm is subject to the provisions of the Ararat Rural City Council Planning Scheme (the area of the subject site located south of the Pyrenees Highway) and the Northern Grampians Planning Scheme (the area of the subject site located north of the Pyrenees Highway), as detailed below.

Under both Planning Schemes, the proposed wind farm is subject to the relevant policies from the State Planning Policy Framework as listed below:

- Clause 11.03 – 2 Environment;
- Clause 11.03 – 4 Infrastructure;
- Clause 15.01 – Protection of Catchments, Waterways and Groundwater;
- Clause 15.03 – Salinity;
- Clause 15.05 – Noise Abatement;
- Clause 15.07 – Protection from Wildfire;
- Clause 15.09 – Conservation of Flora and Fauna;

- Clause 15.11 – Heritage;
- Clause 15.12 – Energy Efficiency;
- Clause 15.14 – Renewable Energy;
- Clause 17.05 – Agriculture;
- Clause 18.04 – Airfields; and
- Clause 19.03 – Design and Built Form.

Ararat Rural City Council Planning Scheme

The Municipal Strategic Statement (MSS) and Local Policies section of the Ararat Planning Scheme include the following relevant policies:

- Clause 21.01 – Municipal Profile;
- Clause 21.02 – Vision;
- Clause 21.05 – Environment; and
- Clause 21.06 – Economic Development.

The site is located in the Farming Zone (FZ). Under the provisions of the FZ a planning permit is required for a '*Wind Energy Facility*'. In addition, the Schedule to the FZ stipulates that a permit is required for all earthworks occurring within the FZ that change the rate of flow or the discharge point of water across a property.

The site is affected by Vegetation Protection Overlay - Schedule 1 (VPO1) and Schedule 2 (VPO2). VPO1 relates to areas of remnant native vegetation that are considered significant with several small areas located within the site, as shown in Annexure 2. A planning permit is required to remove, destroy or lop native vegetation with these areas. VPO2 relates to road side vegetation and also specifies that a planning permit is required to remove, destroy or lop native vegetation within these areas. The impacted areas are shown in Annexure 2.

Northern Grampians Planning Scheme

The Municipal Strategic Statement (MSS) and Local Policies section of the Northern Grampians Planning Scheme include the following relevant policies:

- Clause 21.02 – Municipal Profile;
- Clause 21.06 – Agriculture;
- Clause 21.10 – Environment; and
- Clause 21.11 – Heritage.

The northern part of the site is also included within the FZ, and thus a permit is required for the use and development of a wind energy facility.

The Schedule to the FZ in this Scheme stipulates that a planning permit is required for earthworks which change the rate of flow or the discharge point of water across a property boundary, or which increase the discharge of saline groundwater, on all land where the earthworks are in excess of 200mm above or below ground level.

The site is included in the Environmental Significance Overlay – Schedule 1 (ESO1). This ESO relates to significant ridge environs that display erosion characteristics, and seeks to protect those ridge environs from further degradation. The areas in ESO1 are shown in Annexure 2.

Under the provisions of this Schedule a planning permit is required for buildings and works if the slope of the land where the buildings and works are to be carried out is greater than 10%. Accordingly it is anticipated that a permit would be required pursuant to this Schedule for the proposed wind farm.

Local government area(s):

The proposed Ararat Wind Farm is located within both the Ararat Rural City Council and the Northern Grampians Shire Council areas.

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):
As above and in Section 11 of this form.

9. Land availability and control

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

No Yes If yes, please provide details.

Current land tenure (provide plan, if practicable):

Private land.

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

Private land with commercial lease..

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

Not yet determined. This will be investigated during the next phase of the project.

10. Required approvals

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

The proposed Ararat Wind Farm may require approval under the following Commonwealth and Victorian legislation:

- *Environmental Protection & Biodiversity Conservation Act 1999* (Commonwealth);
- *Environment Effects Act 1978* (Vic);
- *Planning & Environment Act 1987* (Vic);
- *Flora & Fauna Guarantee Act 1988* (Vic);
- *Heritage Act 1995* (Vic); and
- *Aboriginal Heritage Act 2006* (Vic).

It is anticipated that the proposed Ararat Wind Farm will not be considered as a 'controlled action' by the Commonwealth Department of Environment and Water Resources under the *Environmental Protection & Biodiversity Conservation Act 1999*. However, a Referral will be lodged with the Federal Department of the Environment, Water, Heritage and the Arts.

It is expected that the proposed wind farm will not necessitate an Environment Effects Statement and therefore, will be assessed under the *Planning and Environment Act 1987* as a permit application. It is also anticipated that other permits under this Act may be required for native vegetation removal, etc. however these will be confirmed in the next phase of investigations.

Should native vegetation removal be required in the road reserves (subject to more detailed investigation) then a permit may be required under the *Flora & Fauna Guarantee Act 1988*. At this stage, it is not anticipated that a permit will be required.

Have any applications for approval been lodged?

No Yes If yes, please provide details.

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

Department of Sustainability and Environment, Ballarat –Planning Manager Grampians Sector.

Department of Sustainability and Environment, Ballarat –Flora and Fauna Manager.

Other agencies consulted:

Ararat Rural City Council.

Northern Grampians Shire Council.

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):

The following reports outlines the results of the initial investigation:

- Annexure 3 - Detailed Flora and Fauna Assessment – Brett Lane & Associates Pty Ltd;
- Annexure 4 - Preliminary Landscape and Visual Assessment – ERM; and
- Annexure 5 - Preliminary Cultural Heritage Assessment – ERM.

Detailed Flora and Fauna Assessment

The Detailed Flora and Fauna Assessment has raised a number of issues for consideration during the design of the proposed Ararat Wind Farm as detailed below. In each instance the proposed response to the issues is also provided.

- The site is largely cleared of native vegetation for agriculture, some patches of remnant native vegetation are present in the south of the site. The state Native Vegetation Management Framework requires that clearing of native vegetation be avoided in the first instance, with unavoidable removal being minimised and offset with vegetation protection, enhancement and rehabilitation works nearby.

Response: Continued mapping and ‘ground-truthing’ of vegetation within proposed ‘infrastructure zones’ is assisting in developing a wind farm design that avoids, wherever possible, the need to remove native vegetation.

- A small number of threatened plant species listed under the EPBC Act or FFG Act, or listed as rare or threatened on DSE Advisory Lists may occur in remnant vegetation on the proposed site.

Response: Native vegetation remnants may occur on a small proportion of the area potentially proposed for wind farm infrastructure. Initial layout plans should be assessed before finalisation to ensure micro-siting takes this matter into consideration. (Note that this may occur after a planning permit is issued).

- A total of 25 species of threatened fauna (listed on the EPBC Act, the DSE and on the FFG Act), or considered threatened on DSE Advisory Lists may occur on the proposed wind farm site. These species are most likely to occur in areas of remnant woodland or trees and along the roadsides that support remnant native vegetation. None of these threatened species is likely to occur regularly in the vicinity of the ridge tops where turbines are most likely to be located.

Response: Changes to the wind farm footprint and access tracks have been made to avoid areas of intact native vegetation as detailed in Section 8.1.2 of the Detailed Flora and Fauna Assessment. Furthermore, Section 8.2 of that Assessment states that the fauna survey failed to find any rare or threatened species and found that fauna habitat in the proposed footprint was low quality.

RES Australia Pty Ltd will undertake further flora and fauna investigations during the spring season (October, 2008) as recommended by the Detailed Flora and Fauna Assessment as part of the next phase of the project. The additional survey work is discussed further in Section 20.

Preliminary Landscape and Visual Assessment

The preliminary landscape and visual assessment indicated that there are four landscape character types, as follows:

- Landscape Unit 1 - Flat Farmland

This landscape character type is characterised as flat cleared grasslands. Canopy vegetation is limited to the south of the site. There are also some instances of remnant vegetation and revegetation works.

- Landscape Unit 2 - Hilly Farmland

There are a number of cleared hills used for agricultural practices.

- Landscape Unit 3 - Forested Hills

Forested hills occur primarily in State Forests, State Parks, Regional Parks and local reserves. These include Langi Ghiran State Park, Mount Buangor State Park, Mount Cole State Park, Mount Ben Nevis and Ararat Hills Regional Park.

The parks will be assessed further in the final Landscape and Visual Assessment.

- Landscape Unit 4 - Rural Townships

The rural township of Ararat lies approximately 7km west from the nearest site boundary. The smaller township of Crowlands lies approximately 6km north east of the nearest site boundary. The smaller township of Elmhurst is located approximately 13km north east from the nearest site boundary. These smaller townships will be assessed in the final Landscape and Visual Assessment.

The preliminary Landscape and Visual Assessment attached, assesses the potential visual impact upon the four identified landscape character types within the viewshed and upon key publicly accessible vantage points.

The areas surrounding Ararat are predominately cleared, with existing infrastructure including roads, rail, transmission lines, power lines, communication masts and fences.

This preliminary assessment indicates that the subject site and its surrounding area has a generally low sensitivity to a wind farm development, and therefore from a landscape and visual perspective the site would be a suitable location for the proposed wind farm. However, there are some areas, such as the Langi Ghiran State Park and Ararat Hills Regional Park which may have a medium sensitivity rating which will be confirmed within the final Landscape and Visual Assessment.

Preliminary Cultural Heritage Assessment

No known Aboriginal sites have been identified within the areas that will be affected by this proposal. However, given that the areas have the potential for numerous types of Aboriginal sites, it is likely that some degree of past Aboriginal activity may have occurred.

Accordingly further heritage studies and consultation with the relevant Aboriginal community is proposed as part of the next phase of the project. These further studies would be documented via a Cultural Heritage Management Plan as required by the Aboriginal Heritage Act, 2006.

Notwithstanding the above, should any significant aboriginal sites be found in the project area any impacts can usually be avoided by careful location of the turbines and access roads.

12. Native vegetation, flora and fauna

Native vegetation

Is any native vegetation likely to be cleared or otherwise affected by the project?
 NYD **No** **Yes** If yes, answer the following questions and attach details.

What investigation of native vegetation in the project area has been done? (briefly describe)
 A Detailed Flora and Fauna Assessment has been undertaken by Brett Lane & Associates (Annexure 3). The purpose of this assessment was as follows:

- To determine the significant environmental issues that are associated with the development of this project; and
- To specifically assess whether any high risk issues may exist as a result of the development in relation to:
 - The Commonwealth *Environmental Protection & Biodiversity Conservation Act 1999* (EPBC Act);
 - The Victorian biodiversity protection legislation such as the *Flora and Fauna Guarantee Act 1988* (FFG Act);
 - The Victorian *Environment Effects Act 1978*;
 - The Victorian *Native Vegetation Management Framework*; and
 - Relevant local planning provisions of the Ararat Planning Scheme and the Northern Grampians Planning Scheme.

Further spring surveys are planned for the additional 'infrastructure zones' not already surveyed as part of the earlier 50 wind turbine layout.

What is the maximum area of native vegetation that may need to be cleared?
 NYD Estimated area(hectares)
 Only very limited clearing of native vegetation is expected to result. This will be achieved through micro-siting of infrastructure to avoid or minimise any impact.

Section 8.1.6 of the Detailed Flora and Fauna Assessment states:
"Where possible, the final wind farm layout shall avoid areas of native vegetation and avoid populations of any rare and threatened flora species found. Should any significant impact be unavoidable, suitable mitigation measures will be recommended in the Flora and Fauna Management Sub-Plan."

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.

- Heathy Dry Forest (EVC 20);
- Grassy Dry Forest (EVC 22);
- Grassy Woodland/Alluvial Terraces Herb-rich Woodland Mosaic (EVC 76 or 252); and
- Heathy Dry Forest/Grassy Woodland Mosaic (EVC 896).

Have potential vegetation offsets been identified as yet?
 NYD **Yes** If yes, please briefly describe.

Other information/comments? (eg. accuracy of information)
 See attached Detailed Flora and Fauna Assessment report, prepared by Brett Lane & Associates Pty. Ltd.

NYD = not yet determined

Flora and fauna

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

A Detailed Flora and Fauna Assessment has been undertaken by Brett Lane & Associates. Further detailed assessments are proposed to be carried out during the spring season (October, 2008) to investigate that part of the infrastructure zone not surveyed in the spring surveys conducted for the earlier 50 turbine layout. Additionally, as noted above, further post-approval investigations are proposed as part of the preparation and approval of a Construction and Environmental Management Plan (CEMP) that would contain a Flora and Fauna Management Sub-Plan.

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.

Flora:

Existing information on plant species was reviewed to gain an understanding of the likelihood of occurrence of any populations of rare or threatened species.

Table 1 is a list of the likelihood of occurrence of rare and threatened flora species in the 20 kilometre search region that includes the proposed wind farm area. Based on this table, some 15 plant species considered threatened have been recorded in the search region. They occur in either intact heathy wooded forests of the Langhi Ghiran area to the east of the site, or in native grassland habitats to the immediate south, including, possibly, on some of the high conservation significance road reserves in the area.

The chances of most of these species occurring on the ridges where wind turbines and associated infrastructure is likely to be located are considered low. Section 4.3.1 of the Detailed Flora and Fauna Assessment states that: “No species of conservation significance was recorded in the proposed footprint during the survey”.

Table 1 Likelihood of occurrence of rare and threatened flora species in the study area.

Codes:
 FFG = Flora and Fauna Guarantee Act 1988 (f = listed as threatened)
 EPBC = Environment Protection and Biodiversity Conservation Act 1999
 DSE = Advisory List of Rare and Threatened Plants in Victoria (DSE 2005)
 C = Critically Endangered; E, e = Endangered; V, v = Vulnerable

This Assessment shows that there is potential for two threatened species to occur in limited areas of potentially suitable habitat within the study area: Clover Glycine and Spiral Sun-orchid.

Common Name	Scientific Name	FFG	EPBC	DSE	Potential Occur
Buloke	<i>Allocasuarina luehmannii</i>	f			Not recorded
Button Wrinklewort	<i>Rutidosia leptorhynchoides</i>	f	E	e	Unlikely to occur
Clover Glycine	<i>Glycine latrobeana</i>	f	V	V	Potential to occur
Curly Sedge	<i>Carex tasmanica</i>	f	V	v	Unlikely to occur
Grampians Bitter-pea	<i>Daviesia laevis</i>		V	v	Unlikely to occur
Langi Ghiran Grevillea	<i>Grevillea montis-cole</i> subsp. <i>brevistyla</i>		V	v	Unlikely to occur
Large-fruit Fireweed	<i>Senecio macrocarpus</i>	f	V	e	Unlikely to occur

Metallic Sun-orchid	<i>Thelymitra epipactoides</i>	f	E	e	Unlikely to occur
River Swamp Wallaby-grass	<i>Amphibromus fluitans</i>		V		Unlikely to occur
Small Milkwort	<i>Comesperma polygaloides</i>	f		v	Unlikely to occur
Spiny Rice-flower	<i>Pimelea spinescens</i>	f		e	Unlikely to occur
Spiny Rice-flower	<i>Pimelea spinescens</i> subsp. <i>spinescens</i>		C	v	Unlikely to occur
Spiral Sun-orchid	<i>Thelymitra matthewsii</i>	f	V	v	Potential to occur
Swamp Diuris	<i>Diuris palustris</i>	f		v	Unlikely to occur
Trailing Hop-brush	<i>Dodonaea procumbens</i>		V	v	Unlikely to occur

Fauna:

Based on the field assessment and review of existing information, the 20km search region is known to or likely to support 165 species of fauna, including 25 species of mammals (six introduced), 122 species of birds (five introduced), 15 species of reptile and 3 species of frog. These species are listed at Appendix 2 of the Detailed Flora and Fauna Assessment. Table 2 below provides a list of threatened fauna species that occur in the 20km search region. Of these, 21 species are birds, 2 species are mammals and 2 species are reptiles.

Table 2: List of threatened fauna species likely to occur on the Ararat wind farm study area.

Codes: DSE – Status from DSE (2007c); EPBC – Status under EPBC Act; FFG – Listed under FFG Act; CR Critically endangered; EN Endangered; VU – Vulnerable; NT – Lower risk near threatened; L – Listed as threatened under FFG Act; M – Migratory species.

Common Name	Scientific Name	Ecological Significance		
		EPBC	DSE	FFG
Birds				
Swift Parrot	<i>Laathamus discolor</i>	EN	EN	L
Elegant Parrot	<i>Neophema elegans</i>		VU	
Square-tailed Kite	<i>Lophoictinia isura</i>		VU	L
Powerful Owl	<i>Ninox strenua</i>		VU	L
Black-eared Cuckoo	<i>Chrysococcyx osculans</i>		NT	
Hooded Robin	<i>Melanodryas cucullata</i>		NT	L
Speckled Warbler	<i>Chthonicola sagittata</i>		VU	L
Brown Treecreeper	<i>Climacteris picumnus</i>		NT	
Black-chinned Honeyeater	<i>Meliphaga macleayi</i>		NT	
Diamond Firetail	<i>Stagonopleura guttata</i>		VU	L
Bush Stone-curlew	<i>Burhinus grallarius</i>		EN	L
Pied Cormorant	<i>Phalacrocorax varius</i>		NT	
Whiskered Tern	<i>Chlidonias hybridus</i>		NT	
Inland Dotterel	<i>Charadrius australis</i>		VU	
Royal Spoonbill	<i>Platalea regia</i>		VU	
Great Egret	<i>Ardea alba</i>		VU	L
Australasian Shoveler	<i>Anas rhynchotis</i>		VU	
Freckled Duck	<i>Stictonetta naevosa</i>		EN	L
Hardhead	<i>Aythya australis</i>		VU	
Blue-billed Duck	<i>Oxyura australis</i>		EN	L

Musk Duck	<i>Biziura lobata</i>		VU	
Mammals				
Brush-tailed Phascogale	<i>Phascogale tapoatafa</i>		VU	L
Fat-tailed Dunnart	<i>Sminthopsis crassicaudata</i>		NT	
Reptiles				
Eastern Bearded Dragon	<i>Pogona barbata</i>		DD	
Tree Goanna	<i>Varanus varius</i>		VU	

A total of 25 species of threatened fauna occur or are likely to occur within the study area, including 21 threatened birds, 2 threatened mammals and 2 threatened reptiles.

Of these species, the ones most likely to occur on or near the site would occur in areas of remnant woodland or trees, and along roadsides that support remnant native vegetation. These habitats occur on the lower slopes of the site, where wind farm development is expected to be less intense than along the ridgelines. None of the region's threatened species is likely to occur regularly in the vicinity of the ridge-tops where the turbines are likely to be located as habitats there are highly degraded and dominated by exotic pasture grasses with almost no indigenous habitat elements and have an absence of tree hollows and suitable breeding sites.

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.

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.

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

Any impacts on indigenous flora and fauna will be avoided, minimised and offset through the preparation and approval of a Construction and Environmental Management Plan which will include a Flora and Fauna Management Sub-Plan. These plans will be prepared to ensure that the final wind farm layout is micro-sited within the 'infrastructure zone' to mitigate against significant flora and fauna losses.

Other information/comments? (eg. accuracy of information)
See attached report, Annexure 3 - Detailed Flora and Fauna Assessment.

13. Water environments

<p>Will the project require significant volumes of fresh water (eg. > 1 GI/yr)? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, indicate approximate volume and likely source.</p>
<p>Will the project discharge waste water or runoff to water environments? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, specify types of discharges and which environments.</p>
<p>Are any waterways, wetlands, estuaries or marine environments likely to be affected? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, specify which water environments, answer the following questions and attach any relevant details.</p>
<p>Are any of these water environments likely to support threatened or migratory species? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, specify which water environments.</p>
<p>Are any potentially affected wetlands listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please specify.</p>
<p>Could the project affect streamflows? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe implications for streamflows.</p>
<p>Could regional groundwater resources be affected by the project? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, describe in what way.</p>
<p>Could environmental values (beneficial uses) of water environments be affected? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, identify waterways/water bodies and beneficial uses (as recognised by State Environment Protection Policies)</p>
<p>Could aquatic, estuarine or marine ecosystems be affected by the project? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, describe in what way.</p>
<p>Is there a potential for extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems over the long-term? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please describe. Comment on likelihood of effects and associated uncertainties, if practicable.</p>
<p>Is mitigation of potential effects on water environments proposed? <input checked="" type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.</p>
<p>Other information/comments? (eg. accuracy of information) It is anticipated that the development will not impact on the water environment due to the small turbine footprint and the ability to respond to any potential water issues during the micro-siting of the turbines.</p>

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.</p>
<p>Is the project to be located either within or near an area that is:</p> <ul style="list-style-type: none"> <p>Subject to a Landscape Significance Overlay or Environmental Significance Overlay? <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, provide plan showing footprint relative to overlay. There is an ESO affecting that part of the site located north of the Pyrenees Highway, see plan attached in Annexure 2.</p> <p>Identified as of regional or State significance in a reputable study of landscape values? <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please specify. Langi Ghiran State Park and Ararat Hills Regional Park (which are outside the site area boundaries), are identified to be of regional and state significance, however it is anticipated that the proposed wind farm is unlikely to have an impact on the parks. The parks will be assessed further in the final Landscape and Visual Assessment.</p> <p>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.</p> <p>Within or adjoining other public land used for conservation or recreational purposes ? <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please specify. The area of the site north of the Pyrenees Highway adjoins land forming part of the Ararat Hills Regional Park, which was formally known as Dunneworthy State Park.</p>
<p>Is any clearing vegetation or alteration of landforms likely to affect landscape values? <input checked="" type="checkbox"/> NYD <input 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 checked="" type="checkbox"/> NYD <input 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>Other information/comments? (eg. accuracy of information)</p>

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

<p>Is there a potential for effects on land stability, acid sulphate soils or highly erodible soils? <input checked="" type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe. As identified above, ESO1 of the Northern Grampians Planning Scheme affects part of the site as shown in Annexure 2. This ESO relates to significant ridge environs that display erosion characteristics, and seeks to protect those ridge environs from further degradation. The possible impacts the proposed wind farm may have on the areas affected by the overlay, will be assessed as part of the next phase of work.</p>
<p>Are there geotechnical hazards that may either affect the project or be affected by it? <input checked="" type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.</p>
<p>Other information/comments? (eg. accuracy of information) It is anticipated that the project will not have a significant impact on the soil environment however this will be investigated further as part of the remaining assessments.</p>

15. Social environments

<p>Is the project likely to generate significant volumes of road traffic, during construction or operation? <input checked="" type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, provide estimate of traffic volume(s) if practicable.</p>
<p>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? <input checked="" type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe the nature of the changes in amenity conditions and the possible areas affected. The micro-siting of turbines will ensure that noise and shadow flicker impacts on any adjoining (non-stakeholder) residents are within acceptable standards.</p>
<p>Is there a potential for exposure of a human community to health or safety hazards, due to emissions to air or water or noise or chemical hazards or associated transport? <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe the hazards and possible implications. The micro-siting of turbines will ensure that noise impacts on any adjoining (non-stakeholder) residents are within acceptable noise standards, as outlined in Section 17.</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 checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe the likely effects.</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 checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.</p>
<p>Other information/comments? (eg. accuracy of information) RES Australia Pty Ltd will continue its comprehensive community consultation process to: <ul style="list-style-type: none"> • Provide the local community with information about the proposed Ararat Wind Farm; • Provide opportunities for feedback on the proposal; and • Identify appropriate mitigation measures to address any adverse impacts. The details of the consultation process are included in Section 20.</p>

In addition, it is noted that ERM on behalf of RES Australia Pty Ltd has undertaken a study to identify community perceptions towards renewable wind energy, for the region of Ararat (see Annexure 6), and the results demonstrate that a significant majority support the project.

Cultural heritage

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

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

RES Australia has initiated consultations with Aboriginal Affairs Victoria, the Martang Registered Aboriginal Party and the Barengi Gadjin Registered Aboriginal Party, as part of the detailed Archaeological and Aboriginal and Cultural Heritage investigations that are to be carried out.

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

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

A Preliminary Cultural Heritage Assessment (Annexure 5) has been undertaken by ERM. The purpose of the preliminary assessment was to provide an outline of any known significant pre-contact and post-contact cultural heritage items or areas based on existing registers and other readily available information.

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.

The results of the next phase of investigation will influence the turbine layout by identifying any heritage sites or areas of sensitivity to be further investigated.

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

See attached report, Annexure 5.

16. Energy, wastes & greenhouse gas emissions

<p>What are the main sources of energy that the project facility would consume/generate?</p> <p><input type="checkbox"/> Electricity network. If possible, estimate power requirement/output</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</p> <p><input type="checkbox"/> Other. Please describe.</p> <p>Please add any relevant additional information.</p> <p>The proposed Ararat Wind Farm (operating at capacity with up to 76 x 3 MW capacity turbines) would produce up to 684GW Hours per annum of renewable electricity, or enough electricity to power over 105,000 average Victorian homes, while avoiding the production of 684,000 tonnes of greenhouse gas emissions, per annum.</p>
<p>What are the main forms of waste that would be generated by the project facility?</p> <p><input type="checkbox"/> Wastewater. Describe briefly.</p> <p><input type="checkbox"/> Solid chemical wastes. Describe briefly.</p> <p><input checked="" 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.</p> <p>Most material excavated from the footprint of the proposed foundations will be used in the construction of roads and access tracks. There may, however, be small quantities of excavated material to remove to a licensed landfill facility at the completion of the construction works.</p>
<p>What level of greenhouse gas emissions is expected to result directly from operation of the project facility?</p> <p><input 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 proposed Ararat Wind Farm will be capable of producing 684GW hours per annum of renewable electricity, in a clean and environmentally friendly manner, without producing any greenhouse gas emissions. The wind farm would produce enough electricity to power over 105,000 average Victorian homes, while avoiding the production of 684,000 tonnes of greenhouse gas emissions, per annum).</p>

17. Other environmental issues

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

No Yes If yes, briefly describe.

Shadow Flicker:

Shadow flicker results from the position of the sun in relation to the blades of the wind turbines as they rotate. This occurs under certain combinations of geographical location, time of day and prevailing wind.

A shadow flicker assessment will be completed in the next phase of assessment to determine the level of impact against the relevant standard (i.e. dwellings not receiving in excess of 30 hours per year as a result of the operation of the wind farm). This assessment will be completed under 'perfect' conditions (no cloudy days, etc.) along with taking factors such as meteorological averages for cloudy days, topography and vegetation screening into account. RES Australia will ensure that the shadow flicker experienced by any dwelling in the surrounding area of the proposed Ararat Wind Farm will not exceed 30 hours per year, as per the *Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria, 2003*.

Blade Glint:

Blade glint is the reflection of the sun from turbine blades of the wind turbine during rotation. The Ararat Wind Farm will use turbine blades finished in a non-reflective matte finish which will minimise or negate any potential impacts from blade glint.

Transport:

The construction and operation of the Ararat Wind Farm has the potential to impact on the local road network and other infrastructure surrounding the wind farm site. During the construction phase of the development additional traffic movements may have a temporary impact on the efficiency, capacity and standard of local roads.

Various transport access options are under consideration; however, these will be highly dependent on port facilities for the importation of equipment and / or manufacturing location. The impact of traffic on the surrounding road network and community will be considered during the next phase of assessment. A Traffic Management Plan will be developed for the proposed Ararat Wind Farm and implemented during the construction and operational phases of the development. The access arrangements will also be influenced by the need to avoid the removal of native road side vegetation.

Electromagnetic Interference:

Wind farm operations have two potential types of electromagnetic interference, namely passive and active. Passive interference is the obstruction, reflection or refraction of electromagnetic radio signals while active interference is the potential for a turbine to emit electromagnetic radiation. The electromagnetic fields produced by the generation and export of electricity from a wind farm, do not pose a threat to public health. Typically, electrical cabling between turbines is buried in the ground, effectively eliminating any electromagnetic field. Both types of interference can be minimised or eliminated through a combination of appropriate turbine siting and technical solutions.

A review of the Australian Communication & Media Authority's '*Registry Of Radio Communication Licences*' will be completed during the next phase of the assessment with consultation to occur with any potentially affected licence holders.

Noise:

Background noise measurements have been undertaken at the nearest receiver locations. Noise impact analysis of different available turbine models is at a preliminary stage. Ongoing assessment is in accordance with *NZ6808 Acoustics – The Assessment and Measurement of Sound from Wind Turbine Generators* as specified in the *Policy and Planning Guidelines for the*

Development of Wind Energy Facilities in Victoria (Sustainable Energy Authority Victoria 2003) during the next phase of assessment.

Cumulative Impacts:

The cumulative impacts of multiple wind farms and methodologies to measure cumulative impacts have been frequently debated in recent times, however an agreed methodology has yet to be determined.

The proposed Ararat Wind Farm may have the potential for cumulative impacts when combined with other wind farms located in the vicinity of this site, specifically the existing Challicum Hills Wind Farm, the Waubra Wind farm (being constructed) and the proposed Crowlands Wind Farm (which is awaiting determination).

The cumulative impacts of the proposed Ararat Wind Farm, specifically the local community's perceptions towards wind farms is explored within the *Report on Community Perceptions Towards Wind Farms in the Ararat Region, May 2008*, appended at Annexure 6. In addition, the potential for cumulative impacts will be further investigated as part of the next phase of assessment including visual, ecological and transport matters.

18. Environmental management

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

- Siting: Please describe briefly

The siting of turbines and infrastructure will be responsive to the results of the remaining assessments.

- Design: Please describe briefly

The colour and finish of the wind farm turbines are proposed to be off-white in colour with a matt finish, similar to other wind farms operating throughout Australia, to minimise any visual impact. Any acoustic emissions will comply with relevantly applicable limits at receiver locations.

- Environmental management: Please describe briefly.

It is anticipated that a Construction Environmental Management Plan (CEMP) will be required via a condition on any planning permit that may be issued for the proposed development. The CEMP would cover environmental risks during both construction and operational phases of the development and would also incorporate any relevantly applicable conditions of consent.

- Siting: Please describe briefly

The siting of turbines will be responsive to the results of the next phase of assessment.

Add any relevant additional information.

19. Other activities

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

- NYD No Yes If yes, briefly describe.

The existing Challicum Hills Wind Farm, the Waubra Wind Farm (currently being constructed) and the proposed Crowlands Wind Farm (awaiting determination) are within the vicinity of the proposed Ararat Wind Farm. The potential cumulative impacts will be investigated as part of the next phase of assessment including visual, ecological and transport matters.

20. Investigation program

Study program

<p>Have any environmental studies not referred to above been conducted for the project? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please list here and attach if relevant.</p>
<p>Has a program for future environmental studies been developed? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, briefly describe.</p> <p>Ecology:</p> <p>The following investigations are proposed:</p> <ul style="list-style-type: none"> Further spring surveys of areas where infrastructure has been extended beyond the original 50 turbine layout. <p>These investigations will ensure that all potential flora and fauna issues associated with the development are carefully documented and that a detailed and comprehensive impact assessment on flora and fauna can be provided for the planning application and construction stages of the development.</p> <p>Landscape and Visual:</p> <p>A secondary visual assessment will be undertaken which will provide photomontages from selected publicly accessible locations and private residences. The location of these photomontages will be guided by the results of the community consultation process.</p> <p>This assessment will also be guided by the recently released National Assessment Framework produced by AusWind: http://www.auswind.org/auswea/downloads/mediareleases/ACNTPprojectoverviewinformationsheet.pdf.</p> <p>Cultural Heritage:</p> <p>The next phase of cultural heritage assessment will involve the on-site assessment of the proposed turbine locations, access tracks and cabling. In addition, areas with a higher likelihood of containing aboriginal sites, i.e. creek lines, will also be investigated. This investigation will be completed in cooperation with the Martang Registered Aboriginal Party and conducted by a qualified Cultural Heritage Advisor.</p> <p>Other technical studies:</p> <p>Technical studies, in accordance with the <i>Policy and Planning Guidelines for the Development of Wind Energy Facilities in Victoria</i> (Sustainable Energy Authority Victoria 2003), are also proposed for the following:</p> <ul style="list-style-type: none"> Noise; Shadow flicker; Electromagnetic Interference; Greenhouse offsets (Air quality); Transport; Geology; Surface Hydrology; Socio-economic; and Town Planning.

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 consultation programme has been carried out (in accordance with the table below) with local residents, identified stakeholders, local, state and federal government departments, interested parties, the media and a local public open day.


The consultation programme involved letters, e-mails, letter-box drops, home visits by RES representatives to all residents within a 3km radius, press releases, newspaper advertisements, radio interviews, meetings with local Councils' officers and holding Councillors' Briefing Sessions at Ararat Rural City Council and Northern Grampians Shire Council, meetings with government departments (DPCD, DSE), and landowners and will continue with respect to the re-notification of this Referral Form application for the increased turbine numbers. RES Australia has also established an internet website to keep interested parties informed of any developments on the proposal and to receive any comments.

Stakeholders	
Local Community	• Residents and Landowners who will accommodate turbines
	• Residents and Landowners within a 5km radius of the proposed wind farm
	• Other interested community members and clubs (Rotary)
	• Ararat / Stawell Aerodromes
Government Agencies	• Ararat Rural City Council
	• Northern Grampians Shire Council
	• Pyrenees Shire Council
	• Federal Department of the Environment, Water, Heritage and the Arts
	• Federal Member for Wannon, The Hon. David Hawker
	• Department of Defence
	• Royal Australian Air Force
	• Australian Communications and Media Authority
	• State Member for Ripon, The Hon. Joe Helper, Minister for Agriculture, Minister for Small Business
	• Department of Planning and Community Development
	• Department of Sustainability and Environment (Environmental Assessment, Regional and Flora and Fauna Branches)
	• Department of Primary Industries
	• Department of Infrastructure
	• Department of Innovation, Industry and Regional Development
	• Sustainable Energy Victoria
	• VicRoads
	• Heritage Victoria
	• Aboriginal Affairs Victoria
	• Civil Aviation Safety Authority (CASA)
	• Air Services Australia
	• Electricity Transmission Authority (SPI Ausnet, Powercor)
	• Victorian Energy Networks Corporation (VENCorp)
	• Office of the Renewable Energy Regulator
• Glenelg-Hopkins and North Central Catchment Management Authority	
• Grampians Wimmera Mallee Water / Wimmera Catchment Management Authority	
• Port Authorities (Portland, Geelong and Melbourne)	
• Parks Victoria	
• Industry Capability Network (Victoria) Limited	

	<ul style="list-style-type: none"> • Country Fire Authority • State Emergency Services
Non-Government Organisations	<ul style="list-style-type: none"> • Representatives of the local indigenous groups (Martang Registered Aboriginal Party and Barengi Gadjin Land Council) • Landcare • Local tourism organisations • Interested environmental groups • Interested business / industry groups
Media	<ul style="list-style-type: none"> • Local media (newspapers, radio)
Has a program for future consultation been developed? <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, briefly describe.	
<p>Ongoing consultation and project timeframe:</p> <p>During the next phase of the environmental assessment, RES Australia Pty Ltd will consult with interested and affected parties about the design of the modified project and potential impacts. Feedback will be sought from the community, indigenous groups, the responsible authorities, relevant Government agencies, environmental groups and other interested parties. The table above identifies the key stakeholders who will continue to be consulted:</p> <p>The results of the consultation process will be used to refine the project design, inform the environmental assessments, and ensure that all relevant matters of interest or concern have been addressed. Details of the opportunities available to the general public to comment will be publicised after discussions with the responsible authorities and once RES Australia Pty Ltd has developed a comprehensive consultation program.</p> <p>Once all relevant issues have been assessed and the design of the proposed wind farm project is finalised, final consultation will be carried out and a formal planning permit application prepared and lodged with the Minister for Planning.</p> <p>The intended phases of project development and consultation approach are as follows:</p> <p>Phase 1 – Pre-feasibility assessment This work assessed the environmental, planning, technical, commercial and engineering aspects of the proposed Ararat Wind Farm in broad detail. It identified high level constraints and developed a preliminary wind farm layout. This phase has been completed.</p> <p>Phase 2 – Environmental assessment and refinement of proposal The environmental assessments, together with the technical, engineering and development work for the project will be used to finalise a layout for the project. This Phase of the project will enable RES Australia Pty Ltd to become fully informed of any potential environmental impacts and the means to avoid, remedy or mitigate against any potential impacts over the course of this work.</p> <p>During this work, RES Australia Pty Ltd will consult with key stakeholders in relation to the detailed site assessments. In addition, RES Australia Pty Ltd will provide information on the project and the assessment work to the public, particularly the local residents. Consultation will involve the following formats:</p> <ul style="list-style-type: none"> • One-on-one meetings for directly affected residents; • Open days for the general public; and • Communications via the RES Australia web site (www.res-australia.com.au), newsletters and media for general publication. <p>The community and stakeholder groups will be invited to provide comment on the project during these consultations.</p> <p>Phase 3 – Preparation and lodging of the Planning Permit application Once the project has been optimised based on the assessments, further technical work and feedback from stakeholders and the public, the application for a Planning Permit will be lodged.</p>	

Authorised person for proponent:

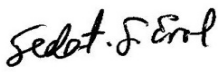
I, [Colin Liebmann, Managing Director, RES Australia Pty Ltd](#), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature 

Date: 26/08/08

Person who prepared this referral:

I, [Sedat Erol, Wind Farm Developer, RES Australia Pty Ltd](#), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature 

Date: 26/08/08