

Environment Effects Act 1978

DRAFT SCOPING REQUIREMENTS

For

GOLDEN PLAINS WIND FARM PROJECT ENVIRONMENT EFFECTS STATEMENT

October 2017



Public comments invited

Public comments are invited on these draft Scoping Requirements in relation to matters that should be investigated and documented as part of the Environment Effects Statement (EES) process for the proposed Golden Plains Wind Farm Project.

A copy of the draft scoping requirements can be downloaded from the Department of Environment, Land, Water and Planning website at www.delwp.vic.gov.au/environmental-assessment

The draft Scoping Requirements are open for public comment until 5:00pm on 3, November, 2017

Any comments received will be considered during the finalisation of the Scoping Requirements. Please note that any submissions on the draft Scoping Requirements will be treated as public documents.

Written comments should be posted to:

Impact Assessment Unit, Planning
Department of Environment, Land, Water & Planning
PO Box 500,
EAST MELBOURNE VIC 8002

or emailed to: environment.assessment@delwp.vic.gov.au

Queries about the **project itself** should be directed to the proponent:

West Wind Energy Pty Ltd
Telephone: (03) 5421 9999
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Website: <http://w-wind.com.au/golden-plains-wind-farm/>

Queries about the **EES process and Draft Scoping Requirements** should be directed to the department:

Impact Assessment Unit
Telephone: 03 8683 0958
Email: environment.assessment@delwp.vic.gov.au

List of abbreviations

AH Act	<i>Aboriginal Heritage Act 2006</i>
CHMP	Cultural heritage management plan
DELWP	Department of Environment, Land, Water and Planning
EE Act	<i>Environment Effects Act 1978</i>
EES	Environment effects statement
EMF	Environmental management framework
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FFG Act	<i>Flora and Fauna Guarantee Act 1988</i>
GWh	Gigawatt hours
Ha	Hectare
kV	Kilovolt
m	Metre
MW	Megawatt
SEPP	State environment protection policy
TRG	Technical reference group

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1 Introduction

In light of the potential for significant environmental effects, on 9 July 2017 the Victorian Minister for Planning (the Minister) determined under the *Environment Effects Act 1978* (EE Act) that WestWind Energy Pty. Ltd. (WestWind) should prepare an Environment Effects Statement (EES) for the proposed Golden Plains Wind Farm (the project). The purpose of the EES is to provide a sufficiently detailed description of the project and to assess its potential effects on the environment¹ and approaches to mitigation. The EES will inform the public and stakeholders and seek feedback to enable the Minister to issue an assessment of the project under the EE Act at the conclusion of the process. The Minister's assessment will then inform statutory decision-makers responsible for the project's approvals.

The *Draft Scoping Requirements for the Golden Plains Wind Farm Project* (draft scoping requirements) set out the specific matters to be investigated and documented in the EES. The final scoping requirements will be issued by the Minister following consideration of public comments received on this draft.

1.1 The project and setting

The project occupies a total area of 17,345 ha and is located to the south, south east and west of Rokewood, including the localities of Werneth, Rokewood and Barunah Park and within the Golden Plains Shire (Figure 1). The project's design comprises up to 231 wind turbines. Ancillary infrastructure associated with the project would include:

- internal site access tracks including upgrades to external access;
- upgrades to roads and intersections along proposed over-dimensional transport route(s);
- hardstand and lay down areas;
- underground electricity cabling;
- overhead power lines (up to 220 kV);
- four electricity collector stations with the provision for energy storage;
- one terminal sub-station (with the provision for energy storage) and connection to the 500 kV transmission line;
- six permanent meteorological masts;
- an operations and maintenance building;
- temporary infrastructure including an on-site quarry (for the singular purpose of supplying materials for the construction of the project and associated infrastructure) and four co-located construction compounds and concrete batching plants; and
- permanent and temporary car parking, site buildings and amenities.

The project would have a total capacity of approximately 800 MW and produce approximately 2,500 GWh of electricity each year. The operational life of the project is anticipated to be 25 years.

Wind turbine specifications are 3-5 MW class; maximum tip height of 230 m above ground level; wind turbine rotor swept area in order of 150 m in diameter; and lower rotor sweep a minimum of 40 m from natural ground level.

1.2 Minister's requirements for this EES

The Minister's decision to require an EES included the procedures and requirements set out in Appendix A, in accordance with section 8B(5) of the EE Act. These requirements focus on matters for the EES to examine:

- potential effects on biodiversity and ecological values within and near the site including native vegetation, listed communities and species (flora and fauna) under the *Flora and Fauna Guarantee Act 1988* and *Environment Protection and Biodiversity Conservation Act 1999*;

¹For the purpose of assessment of environmental effects under the EE Act, the meaning of 'environment' includes physical, biological, heritage, cultural, social, health, safety and economic aspects (*Ministerial Guidelines*, p. 2).

- potential effects on the local and regional landscape values and visual amenity, including for non-neighbouring landholders and local towns; and
- an assessment of alternatives (designs) demonstrating how the project has successfully avoided and minimised potential environmental effects.

These draft scoping requirements provide further detail on the specific matters to be investigated in the EES in the context of *Ministerial guidelines for assessment of environmental effects under the EE Act* (Ministerial Guidelines).

Golden Plains Wind Farm Project – Draft EES Scoping Requirements

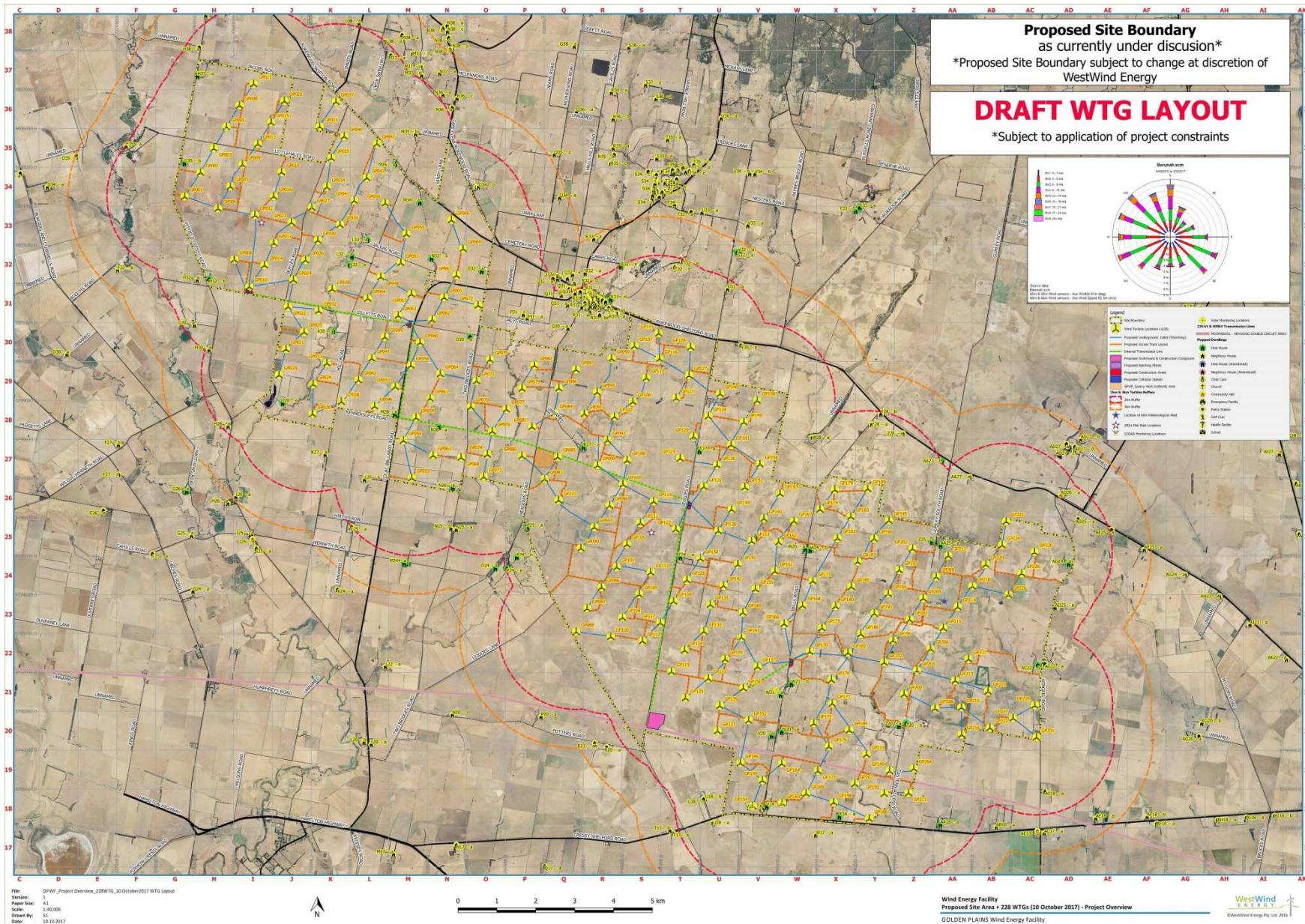


Figure 1. Location and layout of the project (source: WestWind, 2017).

2 Assessment process and required approvals

2.1 What is an EES?

An EES is prepared by WestWind to describe the project and its potential environmental effects. An EES should enable the public, stakeholders and decision-makers to understand how the project is proposed to be implemented and the likely environmental effects of doing so. An EES has two main components.

1. The EES main report – An integrated, plain English document that sets out an analysis of the potential impacts of the project. The main report draws on technical studies, data and statutory requirements such as specific limits for operational noise.
2. The studies that inform the EES – Technical reports on expert investigations and analysis that provide the basis for the EES main report. They will be exhibited in full, as appendices to the main report.

The potential impacts that require technical studies are set out in Section 4 of this document.

2.2 The EES process

WestWind is responsible for preparing the EES, including conducting technical studies and undertaking stakeholder consultation. The Department of Environment, Land, Water and Planning (DELWP) is responsible for managing the EES process². This EES process has the following steps:

- preparation of a draft study program and draft schedule by the proponent (completed);
- establishment of an inter-agency technical reference group (TRG) convened by DELWP (completed);
- preparation and exhibition of draft scoping requirements by DELWP on behalf of the Minister (current step) with public comments received during the advertised exhibition period;
- finalisation and publication of scoping requirements by the Minister;
- review of the proponent's EES studies and draft documentation by DELWP and the TRG³;
- preparation of the EES by the proponent;
- review of the complete EES by DELWP to establish its adequacy for public exhibition;
- exhibition of the proponent's EES and invitation for public comment by DELWP on behalf of the Minister;
- appointment of an inquiry by the Minister to review the EES and public submissions received and provide a report to the Minister (the form of inquiry will be determined following finalisation of the scoping requirements); and
- assessment of the environmental effects of the proposal by the Minister for Planning (Minister's assessment), following receipt of the inquiry report.

Technical reference group

DELWP has convened an agency-based TRG, comprised of representatives of state government agencies and departments and the local government areas. The TRG will advise DELWP and WestWind on:

- applicable policies, strategies and statutory provisions;
- the scoping requirements for the EES;
- the design and adequacy of technical studies;
- WestWind's public information and stakeholder consultation program;
- responses to issues arising from the EES investigations;
- the technical adequacy of draft EES documentation; and
- coordination of statutory processes.

²See www.planning.vic.gov.au/environmental-assessment/what-is-the-ees-process-in-victoria.

³For critical components of the EES studies, peer review by an external, independent expert may be appropriate.

Public engagement

Consultation is a key aspect of the EES process as it enables the public's and stakeholders' knowledge and views to be considered in project planning and decision-making. Consultation during the EES process encompasses:

- formal opportunities for public input into the scoping requirements for the EES and review of the exhibited EES; and
- consultation conducted by the proponent with the public and stakeholders prior to and during EES investigations, to assist in the development of a sound EES.

WestWind is responsible for informing and engaging with the public and stakeholders to identify and respond to their concerns during the EES process. Besides the community at large, stakeholders might include government bodies and authorities, potentially affected parties and interested organisations or individuals.

WestWind's consultation plan will be implemented to familiarise the public and stakeholders with the EES investigations with specific consultation on issues of concern. The consultation plan will be published on the DELWP website and will:

- identify stakeholder groups;
- characterise the stakeholder groups in terms of their interests, concerns and consultation needs and potential to provide local knowledge;
- describe the consultation methods to be used and outline a schedule of consultation activities; and
- outline how inputs from stakeholders will be recorded, considered and/or addressed in the preparation of the EES.

Approvals coordination with the EES process

The project may require a range of approvals under Victorian legislation. DELWP coordinates the EES process as closely as practicable with the approvals procedures, consultation and public notice requirements. Figure 2 outlines the steps in the EES process and the parallel coordination of statutory processes.

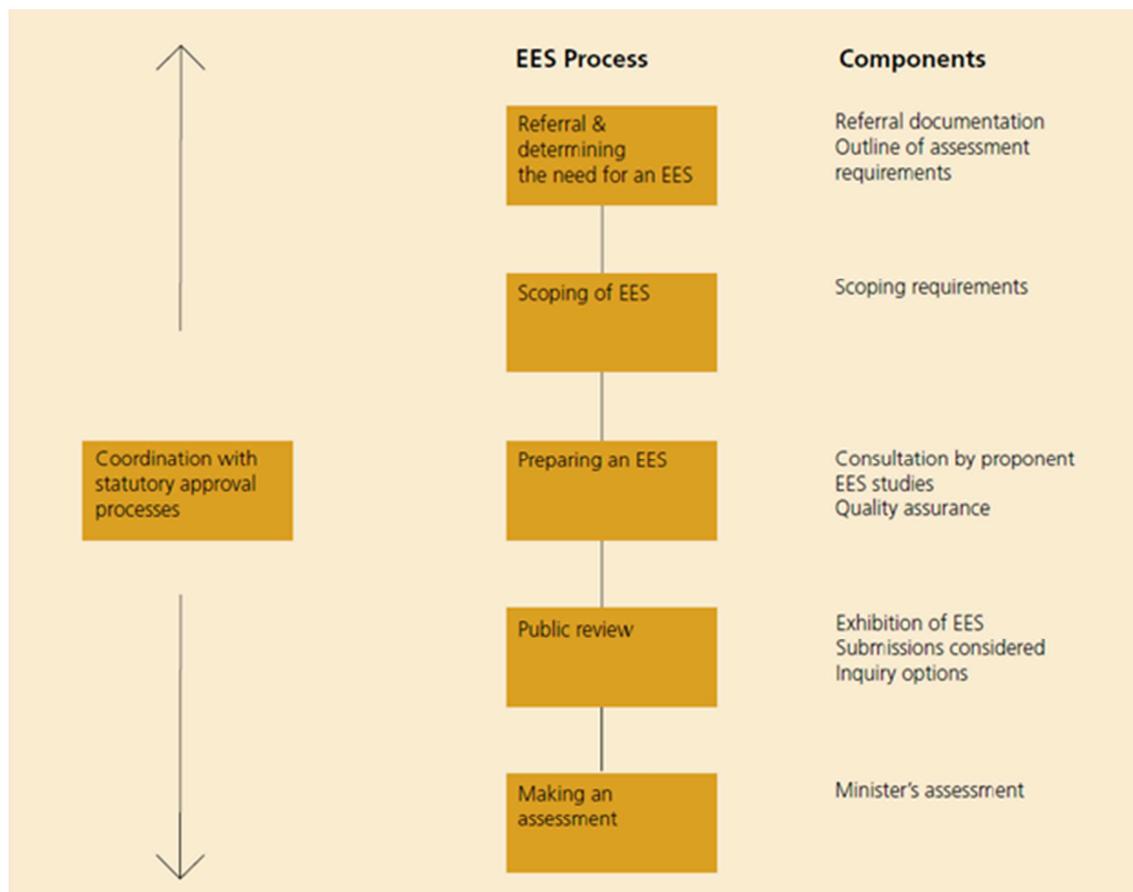


Figure 2. Coordination of statutory assessment and approvals processes.

Buildings, works and development of land associated with a quarry project are exempt from the permit requirements under the Golden Plains Planning Scheme, providing the project is assessed under the EE Act prior to statutory decisions being made under the *Mineral Resources (Sustainable Development) Act 1990* (MRSD Act).

Environmental assessment as part of the EES will include consideration of the quarry site. To facilitate the integrated consideration of issues and the timely completion of required approval processes, it is recommended that the EES include a draft work plan, as required under the MRSD Act.

2.3 Accreditation of the EES process under the EPBC Act

The project was also referred to the Australian Government under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The delegate for the Minister for the Environment and Energy determined on 24 July 2017 that the project is a ‘controlled action’ as it is likely to have a significant impact on matters of national environmental significance (MNES), which are protected under part 3 of the EPBC Act. The project requires assessment and approval under the EPBC Act. The provisions for the Australian Government’s controlled action decision under the EPBC Act are listed threatened species and ecological communities (sections 18 and 18A).

The EES process is accredited to assess impacts on matters of national environmental significance under the EPBC Act through the Bilateral (Assessment) Agreement between the Commonwealth and State of Victoria – refer to Schedule 1 (part 5) of the Bilateral Agreement. The EES for the project will be undertaken in accordance with the Bilateral Agreement; there will be no separate assessment by the Commonwealth. This helps avoid process duplication and enable alignment of mitigation and requirements under the relevant state and commonwealth legislation.

The Commonwealth Minister or delegate will receive the Minister for Planning’s assessment under the EE Act at the conclusion of the EES process and use it as the basis for deciding whether the project is approved, approved with conditions or refused under the EPBC Act. Note that what are generally termed ‘effects’ in the EES process corresponds to ‘impacts’ as defined in section 82 of the EPBC Act.

3 Matters to be addressed in the EES

3.1 General approach

The EES should assess the potentially significant environmental effects⁴ arising from construction, operational and decommissioning / rehabilitation stages of the project. In the case of potentially significant effects, analyses documented within the EES should be detailed enough to provide a good understanding of the nature of the effects including:

- potential effects on individual environmental assets, including magnitude, extent and duration of change in the values of each asset, having regard to intended avoidance and mitigation measures;
- the likelihood of adverse effects and associated uncertainty of available predictions or estimates;
- further management measures that are proposed where avoidance and mitigation measures do not adequately address effects on environmental assets, including specific details of how the measures address relevant policies;
- likely residual effects, including on relevant MNES, that are likely to occur after all proposed measures to avoid and mitigate environmental effects are implemented; and
- proposed approach to managing and monitoring environmental performance and contingency planning.

Preparation of the EES document and the necessary investigation should be consistent with the principles of a systems approach and a risk-based⁵ approach, so that a greater level of effort is directed at investigating and addressing those matters that pose relatively higher risk of adverse effects. The EES should put forward a sound rationale for the level of assessment and analysis undertaken for any particular impact or combination of impacts. For example, some issues are most appropriately assessed using a quantitative approach and others through a qualitative approach.

3.2 General content and style of the EES

It is WestWind's responsibility to ensure that adequate studies are undertaken to support the assessment of environmental effects, focusing primarily on significant effects. However, to facilitate decisions on required approvals, the EES should address statutory requirements associated with approvals that will be informed by the Minister's assessment. The EES should also address any other significant issues that emerge during the investigations.

The main EES report should provide a clear, objective and well-integrated analysis of the potential effects of the project, including proposed mitigation and management measures, as well as relevant alternatives. Overall, the main report should include the following:

- an executive summary;
- a description of the entire project, including its objectives, rationale, key elements and associated requirements for new infrastructure and use of existing infrastructure;
- a description of the relationship of the project to public policies and plans;
- an outline of the primary approvals required for the project to proceed;
- a description of design alternatives considered to meet the project's objectives while describing how the preferred design has avoided and minimised potential environmental effects and enhanced potential benefits;
- descriptions of the existing environment, where this is relevant to the assessment of potential effects;
- appropriately detailed assessments of potential effects of the project on environmental values, relative to the 'no project' scenario, together with an estimate of the uncertainty associated with predictions;
- intended measures for avoiding, minimising, managing and monitoring effects;

⁴ Effects include direct, indirect, combined, consequential, short and long-term, beneficial, adverse and cumulative effects.

⁵ This is outlined in the Ministerial Guidelines (p. 14)

- predictions of residual effects of the project assuming implementation of proposed environmental management measures;
- any proposed offset measures where avoidance and mitigation measures will not adequately address effects on environmental values;
- responses to issues raised through public and stakeholder consultation; and
- evaluation of the implications of the project for the implementation of applicable legislation and policy, including the principles and objectives of ecologically sustainable development and environmental protection.

The proponent must also prepare a concise, graphical-based non-technical summary document (hard copy A4, no more than 25 pages) for free distribution to interested parties. The EES summary document should include details of the EES exhibition, public submission process and availability of the EES documentation.

3.3 Project description

The EES is to describe the project in sufficient detail to allow an understanding of all components, processes and development stages, and to enable assessment of their likely potential environmental effects. The project description should canvass the following:

- an overview of the proponent, including relevant experience in developing and operating projects, its health, safety and environmental policies and a description of the environmental performance regime and environmental history of the proponent;
- contextual information on the project, including its objectives and rationale, its relationship to relevant statutory policies, plans and strategies (if relevant), and implications of the project not proceeding;
- existing and planned land uses within and in the vicinity of the project, supported by plans and maps;
- details of all the project components including:
 - location, footprint, layout,
 - site establishment and access arrangements during site establishment, construction and operation,
 - methods of construction,
 - technical specifications and design capacity,
 - water sources, demand and extraction,
 - solid waste, wastewater and hazardous material generation and management during construction,
 - proposed hours of operation, workforce requirements (total work force) and recruitment policies during establishment, construction, operation, decommissioning and rehabilitation, and
 - performance requirements.
- information on the project's operational life, including expected construction timetabling and staging, and any decommissioning and rehabilitation arrangements; and
- other necessary works directly associated with the project, such as road upgrades, infrastructure and services relocation, or augmentation of existing plant and facilities.

3.4 Project development and alternatives

The EES should document the consideration of alternatives and the explanation of the selection process for the alternatives identified and evaluated through the EES. The EES should investigate and document the likely environmental effects of relevant alternatives, particularly where these offer a distinct potential for superior environmental outcomes and are capable of meeting the objectives of the project. In the first instance, the discussion of relevant alternatives should include:

- turbine models and configurations (including height, blade length and generator models);

- internal collector power-line route selection process and investigations into the potentially suitable technologies, including but not limited to, undergrounding;
- access road site selection and alignment process;
- infrastructure layouts;
- sourcing of raw construction materials (e.g. on-site and off-site quarry); and
- transport route selection process.

Where appropriate, the assessment of environmental effects of relevant alternatives is to address the matters set out in the subsequent sections of this document.

Overall, the depth of investigation of alternatives should be proportionate to their potential to minimise adverse effects, while the depth of investigation of particular environmental effects should be proportionate to their associated risks.

3.5 Applicable legislation, policies and strategies

In addition to the EE Act and the EPBC Act, the EES will need to identify relevant legislation, policies, guidelines and standards, and assess their specific requirements or implications for the project, particularly in relation to required approvals, including (but not limited to):

- *Planning and Environment Act 1987* (PE Act), and relevant provisions in the Golden Plains Planning Scheme and Colac Otway Planning Scheme;
- *Environment Protection Act 1970* (EP Act), including the principles of environment protection and relevant state environment protection policies (SEPPs);
- *Mineral Resources (Sustainable Development) Act 1990* (MRSD Act) and associated regulations and guidelines;
- *Flora and Fauna Guarantee Act 1988* (FFG Act);
- *Wildlife Act 1975*.
- *Aboriginal Heritage Act 2006* (AH Act);
- *Heritage Act 1995*;
- *Water Act 1989*;
- *Catchment and Land Protection Act 1994* (CLP Act);
- *Climate Change Act 2017*; and
- *Road Management Act 2004* (RM Act);

The proponent will also need to identify and address other relevant policies, strategies, subordinate legislation and related management or planning processes that may be relevant to the assessment of the project and relevant roadside management strategies under Golden Plains and Colac Otway Planning Schemes. These might include, but are not limited to:

- *Policy and planning guidelines for development of wind energy facilities in Victoria* (2016);
- *Permitted Clearing of Native Vegetation – Biodiversity Assessment Guidelines* (2013);
- *New Zealand Standard NZS 6808:2010, Acoustics – Wind Farm Noise*;
- *Central Highlands Regional Plan*;
- *Corangamite Regional Catchment Management Strategy 2013-2019* (2013);
- *Corangamite Waterway Strategy 2014-2022* (2014);
- *EPA Recommended Separation Distances for Industrial Residual Air Emissions* (2013);
- *EPA Protocol for Environmental Management, Mining and Extractive Industries* (2007);
- *EPA Environmental Guidelines for the Concrete Batching Industry* (1998);

- *Interim Guidelines for the Assessment, Avoidance, Mitigation and Offsetting of Potential Wind Farm Impacts on the Victorian Brolga Population* (2012); and
- EPBC Act policy statements and recovery plans for nationally listed threatened species and ecological communities.

3.6 Consultation

The EES should document the process and results of the consultation undertaken by WestWind during the preparation of the EES, including:

- issues raised and suggestions made by stakeholders or members of the public; and
- the responses then made by the proponent in the context of the EES studies or the associated consideration of mitigation measures.

The EES should also provide an outline of a program for community consultation, stakeholder engagement and communications proposed for implementation of the project, including opportunities for local stakeholders to engage with the proponent to seek responses to issues that might arise during project implementation.

3.7 Environmental Management Framework

Inadequate management of environmental effects and delivery of environmental benefits during project construction and operation could result in a failure to meet statutory requirements, protect environmental values or sustain stakeholder confidence. Hence, the environmental management framework (EMF) provided in the EES should provide a transparent framework with clear accountabilities for managing and monitoring environmental effects and hazards associated with the construction and operational phases.

The EMF should describe the baseline environmental conditions to allow evaluation of the residual environmental effects of the project, as well as the efficacy of applied environmental management and contingency measures. The framework should include:

- an environmental management system, with organisational responsibilities, accountabilities and governance arrangements;
- an environmental risk register that is maintained during project implementation; and
- environmental management measures proposed in the EES to address specific issues, including commitments to mitigate adverse effects and enhance environmental outcomes.

The EMF should outline the relevant Environmental Management Plans for construction and operation phases of the project as well as the process and timing for development of these plans. The entity responsible for approval of the relevant plans should be identified.

An important aspect of the EMF is community consultation, stakeholder engagement and communications during the construction and operation of the project. As the project proceeds it will largely be the EMF that outlines opportunities for local stakeholders to engage with the proponent to seek responses to issues that might arise during construction or operation. To this end the EMF will set out procedures for:

- complaints recording and resolution;
- auditing and reporting of performance including compliance with relevant statutory conditions and standards; and
- review of the effectiveness of the environmental management framework for continuous improvement.

Project environmental performance standards or requirements that define project-wide environmental outcomes to be achieved should be clearly described in the EMF. The proposed objectives, indicators and monitoring requirements, including for managing or addressing:

- biodiversity values, including bird and bat mortality and any contingency or offsetting measures, if required;
- landscape and visual amenity, including blade glint and shadow flicker;
- social outcomes and community engagement;
- construction noise, vibration and dust;
- traffic during construction and local infrastructure;
- operational turbine noise;
- surface water and groundwater effects;
- energy and greenhouse gas emissions;
- waste management;
- Aboriginal and historic cultural heritage values; and
- site reinstatement, including the on-site quarry.

3.8 Draft evaluation objectives

Table 1 includes draft evaluation objectives that identify desired outcomes in the context of potential project effects and relevant legislation. They provide a suitable framework to evaluate the project's effects and outcomes and may also be assisted by WestWind formulating more specific assessment criteria under each objective during the development of the EES, to assist the evaluation of specific effects. The project will need to consider a balance of economic, social and environmental outcomes that contribute to ecologically sustainable development and demonstrate a net community benefit over the short and long-term through its assessment of the project against the evaluation objectives.

The framing of the draft objectives reflects the key subject matters to be investigated for the EES, as stated in the Minister's decision to require an EES (Section 1.2), relevant legislation and policies (Section 3.5), the objectives and principles of ecologically sustainable development and environmental protection, as well as environmental issues identified by the proponent in their documentation.

The level of effort applied to the investigation, management and mitigation of issues in the context of the draft evaluation objectives should be proportionate to the significance of potential adverse effects (Section 4). The proponent should consult closely with DELWP and the TRG throughout the preparation of the EES to ensure that the investigation of issues is undertaken soundly and appropriately targeted.

Table 1. Draft evaluation objectives.

Objective	Key legislation
Biodiversity. To avoid, minimise or offset potential adverse effects on native vegetation, habitat, listed threatened species and ecological communities, migratory species, and other protected flora and fauna.	PE Act, EPBC Act, FFG Act, Wildlife Act
Landscape and visual amenity. To minimise and manage potential adverse effects for the community with regard to landscape and visual amenity.	PE Act
Land use and Socio-economic. To manage potential adverse effects and benefits for the community, businesses and associated land uses.	PE Act
Community amenity, roads and transport. To manage potential adverse effects for the community, businesses and land uses with regard to construction noise, vibration, dust, traffic and transport and operational turbine noise, electromagnetic interference and aviation safety.	EP Act, PE Act, RM Act
Cultural Heritage. To avoid or minimise potential adverse effects on Aboriginal and historic cultural heritage.	AH Act, Heritage Act
Catchment values. To maintain the functions and values of aquatic environments, surface water and groundwater including avoiding adverse effects on hydrology and protected beneficial uses including downstream biodiversity values and their habitat.	C&LP Act, EP Act, Water Act.

4 Assessment of specific environmental effects

The Minister determined an EES was required for the project due mainly to the potential risk to existing biodiversity values of State and National significance and modification to the existing landscape and visual amenity of the area. Therefore, the EES studies should focus on the investigation of these issues. However, the EES should canvass an environmental management approach and performance measures to ensure that any potential adverse environmental effect of the project is identified and avoided, minimised or mitigated.

The following sections set out specific requirements for the assessment of effects, using the following structure for each of the matters to be investigated.

- **Key issues.** This section identifies the potential issues or risks that the project poses. The proponent might undertake an appropriate environmental risk assessment to identify additional issues.
- **Existing environment.** This section sets out the assessment requirements for baseline conditions and trends to characterise the significance and resilience of the environment impacted by the project.
- **Design and mitigation measures.** This section considers and commits to design (or other available) measures that could substantially avoid, mitigate or manage significant effects and risks.
- **Assessment of likely effects.** This section predicts or estimates potential and residual effects and risks (after design and mitigation measures have been implemented) and evaluates the significance of those effects and risks.
- **Approach to manage performance.** This section describes offsets, monitoring and contingency measures that are proposed to ensure that effects are controlled if monitoring demonstrates more significant adverse effects than predicted or permitted.

4.1 Biodiversity

Draft evaluation objective

To avoid, minimise or offset potential adverse effects on native vegetation, habitat, listed threatened species and ecological communities, migratory species, and other protected flora and fauna.

Key issues

- Loss and temporary disturbance of native vegetation and associated listed vegetation communities and flora, listed under the FFG and EPBC Acts, including but not limited to: Western (basalt) plains grassland, Natural temperate grassland of the Victorian volcanic plain, Grassy eucalypt woodland of the Victorian volcanic plain and Seasonal herbaceous wetlands (freshwater) of the temperate lowland plains.
- Loss of, or degradation to, habitat for species of flora and fauna listed under the FFG and EPBC Acts including but not limited to: the Small milkwort (*Comesperma polygaloides*), Small scurf-pea (*Cullen parvum*), Tough scurf-pea (*Cullen tenax*), Small golden moths (*Diuris basaltica*), Clumping golden moths (*Diuris gregaria*), Trailing hop-bush (*Dodonaea procumbens*), Clover glycine (*Glycine latrobeana*), White sunray (*Leucochrysum albicans* var. *tricolor*), Spiny rice-flower (*Pimelea spinescens*), Shelford leek-orchid (*Prasophyllum fosteri*), Fragrant leek-orchid (*Prasophyllum suaveolens*), Hairy tails (*Ptilotus erubescens*), Button wrinklewort (*Rutidosis leptorrhynchoides*), Large-headed fireweed (*Senecio macrocarpus*), Swamp fireweed (*Senecio psilocarpus*), Basalt sun-orchid (*Theelymitra gregaria*), Swamp everlasting (*Xerochrysum palustre*), Plains wanderer (*Pedionomus torquatus*), Golden sun moth (*Synemon plana*), Striped legless lizard (*Delma impar*) and Growling grass frog (*Litoria raniformis*).
- Potential collision risk for protected bird and bat species with project infrastructure.

- Potential cumulative effects⁶ on listed species of fauna, in particular Brolga (*Grus rubicunda*), from the project in combination with other wind energy facilities.
- Potential indirect habitat loss or degradation resulting from other effects of ground disturbance such as edge effects, surface hydrological changes, groundwater changes, dust and noise on listed values.
- The availability of suitable offsets that satisfy the requirements of applicable state government native vegetation policy and the EPBC Act *Environmental Offsets Policy* (October 2012).

Existing environment

- Characterise the distribution and quality of biodiversity values that could be affected by the project and associated over-dimensional transport route upgrades, including native vegetation and EPBC Act listed ecological communities, terrestrial and aquatic habitat and patterns of wildlife movement in the area that could be impacted by the project.
- Identify the presence or likely presence of any species or communities listed under the EPBC Act and the FFG Act, other protected species and any declared weeds or pathogens.
- This characterisation is to be informed by relevant databases, literature and appropriate targeted and/or seasonal surveys and modelling where appropriate. In the absence of positive identification of the presence of listed species and communities, but where suitable habitat is identified, a precautionary approach to the further investigation and assessment of its occurrence should be applied.
- Adequate surveys for EPBC Act listed threatened species and ecological communities should be undertaken in accordance with Commonwealth conservation advices and threatened species recovery plans and completed prior to publication of the draft EES for public comment.

Design and mitigation measures

- Identify and describe the potential and proposed design and mitigation measures, which could avoid or minimise significant effects on native vegetation, and/or any EPBC and/or FFG Act listed flora, fauna and ecological communities.
- Proposed mitigation measures should include relevant justification and describe the assumptions and level of uncertainty associated with the proposed measures achieving their desired outcomes.

Assessment of likely effects

- Assess the direct and indirect effects of the project on native vegetation, listed ecological communities and listed threatened and other protected flora species.
- Assess the direct and indirect effects of the project on listed threatened, migratory and other protected fauna species, including Brolga strike of turbines and/or overhead powerlines, and their habitats.
- Assess the potential cumulative effects of the project on listed species of fauna, in particular Brolga, from the project in combination with other wind energy facilities.

Approach to manage performance

- Describe and evaluate proposed measures or performance requirements, as appropriate, to further mitigate or manage residual effects of the project on biodiversity values and provide an estimation of likely residual effects.
- Identify proposed offset measures to address requirements of applicable state government native vegetation policy and the EPBC Act *Environmental Offsets Policy* (October 2012).

⁶In order to assess cumulative impacts, the EES needs to identify surrounding wind energy facilities that: (a) are operational; (b) have been approved; (c) have been referred under the *Environment Effects Act 1978*; and/or (d) are the subject of planning permit applications under the *Planning and Environment Act 1987*.

4.2 Landscape and visual amenity

Draft evaluation objective

To minimise and manage potential adverse effects for the community with regard to landscape and visual amenity.

Key issues

- Potential for nearby residents / communities to be exposed to unacceptable changes to the visual amenity⁷, including views, blade glint and shadow flicker, from project infrastructure.
- Potential effects on landscape through removal or covering of features or reshaping of surfaces.
- Potential effects on significant landscape values of the region.

Existing environment

- Characterise the geomorphology, landscape character, features and values of the project site area, their significance and sensitivity to change.
- Identify significant public and private view sheds to and from the project.
- Identify existing built features within the landscape (e.g. Mount Mercer wind farm and 500 kV power lines) and their impact on the existing landscape and visual setting.
- Identify the components of the project that may result in a significant visual amenity effect including turbines, electricity lines and the connection to the grid and terminal station.

Design and mitigation measures

- Outline and evaluate potential design and siting options that could avoid and minimise potential effects on landscape and visual amenity from adjoining residences and communities and additional management strategies that may further minimise potential effects.

Assessment of likely effects

- Assess the landscape and visual effects of the project, including views, blade glint and shadow flicker, on neighbouring dwellings and communities. Use photomontages and other visual techniques to support this assessment.
- Assess the potential for cumulative impacts associated with the development of the project in the context of existing built infrastructure (e.g. Mount Mercer wind farm and 500 kV power lines) and nearby proposed wind farm developments.

Approach to manage performance

- Identify residual effects on landscape and visual amenity and outline any additional measures to manage these effects, including in the context of potential rehabilitation and restoration work following decommissioning.

4.3 Land use and socio-economic

Draft evaluation objective

To manage potential adverse effects and benefits for the community, businesses and associated land uses.

Key issues

- Potential for project construction or operation to unreasonably disrupt existing and / or proposed land uses, with associated economic and social effects on households and businesses.

⁷ Note the visual assessment should be subject to independent peer review as required by *Policy and planning guidelines for development of wind energy facilities in Victoria* (2016).

Existing environment

- Describe the project area in terms of land use (existing and proposed), residences, zoning and overlays under the Golden Plains Planning Scheme, Colac Otway Planning Scheme and public infrastructure that support current patterns of economic and social activity.
- Describe local community attributes such as demographics, community facilities and community groups.
- Describe community attitudes, identified through consultation activities, to the existing environment and the potential changes and opportunities brought by the project.

Design and mitigation measures

- Identify any proposed measures to mitigate adverse land use effects.
- Demonstrate whether the project is consistent with relevant provisions of the Golden Plains and Colac Otway Planning Schemes and other relevant strategies made under Victorian legislation.
- Outline measures to minimise potential adverse effects and enhance benefits to the community and local businesses.

Assessment of likely effects

- Identify the potential economic effects, taking into account direct and indirect consequences of the project on employment and land uses within the area.
- Outline measures to minimise potential adverse effects to local businesses and to enhance potential benefits to local and regional businesses.
- Identify potential long and short-term effects of the project on existing and potential proposed land uses (such as aerial spraying and other agricultural activities), public infrastructure (such as transmitters and receivers) and fire and emergency management (such as aerial firefighting).

Approach to manage performance

- Describe any further measures that are proposed to mitigate, offset or manage social, land use and economic outcomes for communities living within or in the vicinity of the project area, as well as proposed measures to enhance beneficial outcomes.

4.4 Community amenity, roads and transport

Draft evaluation objective

To manage potential adverse effects for the community, businesses and land uses with regard to construction noise, vibration, dust, traffic and transport and operational turbine noise, electromagnetic interference and aviation safety.

Key issues

- Managing loss of amenity during construction through generation of noise, vibration, dust and lighting changes.
- Managing traffic disruptions for residents, businesses and travellers during the construction of the project.
- Potential damage to local and regional road surfaces along transport routes and increased risk to road safety on transport routes.
- Managing loss of amenity during operations through generation of noise generated by wind turbines.

Existing environment

- Identify sensitive receptors that may be subject to the various amenity effects from the project during construction and operation.
- Characterise the ambient noise and vibration environment at sensitive locations.

- Describe the existing road network surrounding the project area, including proposed construction transport route options, in terms of capacity, condition, accessibility, potentially sensitive users and travel.
- Identify existing airfields in proximity to the project.

Design and mitigation measures

- Describe and evaluate both potential and proposed design responses and / or other mitigation measures (construction equipment, staging and scheduling of works), which could minimise noise (construction and operations), dust (construction), vibration (construction) and electromagnetic interference (operations) effects on sensitive receptors.
- Outline the required road upgrades to accommodate construction traffic and additional road maintenance regime to address adverse impacts of the project construction.
- Describe and evaluate the proposed traffic management and safety principles to address changed traffic conditions during construction of the project, covering (where appropriate) road safety, temporary or permanent road diversions, different traffic routes, hours of use, vehicle operating speeds, types of vehicles and emergency services provisions.
- Describe and evaluate potential design responses and/or other mitigation measures to reduce potential effects to aviation safety.

Assessment of likely effects

- Assess the potential for construction and operation of the project to increase noise levels (construction and operations), dust (construction) and/or vibration (construction) at sensitive receptors. The assessment should include an estimation of noise from all project-related sources at different times over a 24-hour cycle to establish the likely conditions to be experienced at sensitive receptors. The assessment of potential dust impacts from the proposed quarry should be consistent with the requirements of EPA Victoria's *Protocol for Environmental Management: Mining and Extractive Industries* (2007).
- Assess the potential effects of construction activities on existing traffic, preferred traffic routes and road conditions. This assessment should take account of amenity and accessibility impacts on adjoining residents and in nearby townships, any significant environmental effects arising from such works and physical impacts on the road infrastructure.
- Assess the potential for electromagnetic interference to radio-communications services from the project.
- Assess the potential effects to aviation safety from the project.
- Identify any additional road works / upgrades required to accommodate the project traffic during the construction stage and any significant environmental effects arising from such works.

Approach to manage performance

- Outline and evaluate proposed additional measures to monitor and manage noise, dust and vibration levels to minimise residual effects and ensure compliance with standards, where necessary, including proposed trigger levels for initiating contingency actions. Outline potential contingency actions.
- Outline and evaluate any proposed measures designed to manage and monitor residual effects on local infrastructure, land use and neighbouring landowners and road users.
- Outline and evaluate any proposed measures designed to manage residual effects to aviation safety.

4.5 Cultural heritage

Draft evaluation objective

To avoid or minimise potential adverse effects on Aboriginal and historic cultural heritage.

Key issues

- Aboriginal and / or historical cultural heritage values within the project area.

Existing environment

- Identify and characterise Aboriginal cultural heritage sites or areas of sensitivity within the project area, in accordance with the requirements for the Cultural Heritage Management Plan (CHMP) under the AH Act.
- Identify and document known and previously unidentified places and sites of historic cultural heritage significance within and adjoining the project area, including any areas of significant archaeological interest, in accordance with the *Guidelines for Conducting Archaeological Surveys* (Heritage Victoria, 2013).

Design and mitigation measures

- Describe design, management or site protection measures that could avoid or mitigate potential adverse effects on known or potential Aboriginal cultural heritage or historical cultural heritage values, especially with regard to project construction.

Assessment of likely effects

- Assess potential effects of the project on:
 - identified sites or places of Aboriginal cultural heritage significance; and
 - sites and places of historic cultural heritage significance, having regard to the *Guidelines for Investigating Historical Archaeological Artefacts and Sites*.

Approach to manage performance

- Preparation of a draft CHMP(s) under the AH Act.
- Outline and evaluate proposed measures to manage and monitor effects on:
 - sites and places of Aboriginal cultural heritage significance, within the framework of a draft CHMP(s)⁸; and
 - sites and places of historic cultural heritage significance, including as part of the EMF (see section 3.7).

4.6 Catchment Values

Draft evaluation objective

To maintain the functions and values of aquatic environments, surface water and groundwater including avoiding adverse effects on hydrology and protected beneficial uses including downstream biodiversity values and their habitat.

Key issues

- Potential for the project to have a significant effect on hydrology and affect existing sedimentation and erosion processes leading to land and aquatic habitat degradation.
- Potential for the project to have a significant effect on groundwater and its beneficial uses.

Existing environment

- Characterise the groundwater and surface water environments and drainage features in the project area, including the occurrence and representation of different wetland types.
- Characterise the soils in the project area.

Design and mitigation measures

- Identify proposed measures to mitigate any potential effects, including any relevant design features or preventative techniques to be employed during construction.

Assessment of likely effects

⁸ Refer to EES Advisory Note: Aboriginal Cultural Heritage and the Environment Effects Process for further advice.

- Identify and assess potential effects of the project on water environments and beneficial uses, including on permanent and ephemeral wetland systems, downstream biodiversity values and their habitat, waterways, and surface water and groundwater flow and quality.
- Identify and assess potential effects of the project on soil stability, erosion and the exposure and disposal of any waste or hazardous soils.

Approach to manage performance

- Identify any additional measures to manage and monitor effects on catchment values and identify likely residual effects.