

Project Specific Guidelines
for Preparing an
Environmental Impact
Statement
for
Epuron Projects Pty Ltd
Guildford Wind Farm

December 2020



ENVIRONMENT PROTECTION AUTHORITY

Contents

General Information for the Proponent	1
Contents of the EIS.....	1
Executive Summary	1
Table of Contents.....	1
List of Abbreviations	1
Key Issues to be addressed.....	2
1. Introduction	3
2. Proposal Description	3
General note.....	3
2.1 General	4
2.2 Construction	4
2.3 Commissioning.....	4
2.4 Operation and maintenance	4
2.5 General location map	5
2.6 Site plan	5
2.7 Visual description	5
2.8 Off-site infrastructure.....	6
3. Project Alternatives	6
4. Consultation	6
5. The Existing Environment.....	7
5.1 Planning aspects.....	7
5.2 Environmental aspects	8
5.3 Socio-economic aspects.....	8
6. Potential Impacts and their Management	9
6.1 Key Issue 1: Threatened avian fauna	12
6.2 Key Issue 2: Threatened non-avian fauna	15
6.3 Key Issue 3: Threatened flora and ecological communities	17
6.4 Key Issue 4: World Heritage properties and National Heritage places	19
6.5 Key Issue 5: Noise emissions.....	20
6.6 Air Quality	20
6.7 Surface Water Quality	21
6.8 Groundwater	21
6.9 Waste Management	21
6.10 Dangerous goods and environmentally hazardous materials.....	22
6.11 Natural Values.....	22
6.12 Greenhouse gases	23
6.13 Socio-economic issues.....	23

6.14	Fire risk	24
6.15	Infrastructure and off-site ancillary facilities	24
6.16	Cumulative and interactive impacts	25
6.17	Environmental Impacts of Traffic	25
7.	Monitoring and Review	25
8.	Decommissioning and Rehabilitation.....	25
9.	Management Measures.....	25
10.	Conclusion.....	26
11.	References	26
12.	Appendices.....	26
13.	Glossary	26
Appendix A: Other issues and agency contacts		27
Appendix B: Avian mortality monitoring plan guidelines		29

General Information for the Proponent

Purpose

The *Environmental Management and Pollution Control Act 1994* (EMPC Act) requires the Board of the Environment Protection Authority (the Board) to provide guidance to the proponent about what should be included in the case for assessment.

The Board will assess environmental aspects of the proposal. The relevant Planning Authority (Waratah-Wynyard Council) will assess planning aspects in accordance with the *Land Use Planning and Approvals Act 1993* (LUPA Act). The Board has authorised EPA Tasmania to undertake administrative tasks and establish the information base to inform decision making on its behalf.

These guidelines provide information on preparing an Environmental Impact Statement (EIS) for an activity being assessed by the Board under the EMPC Act.

Information solely for the purpose of assessment under the relevant Planning Scheme should be supplied to the Planning Authority either:

- as required under s54 of the LUPA Act, where the planning application has commenced the environmental assessment process; or
- where it is intended to submit an EIS (draft or final) with the planning application, a combined planning and environmental report can be prepared. However, the information required for the Board's assessment must be distinguished from that supplied for the purposes of the LUPA Act.

Risk Based Assessment

The EIS should be prepared using a risk based approach. Not all issues nominated in these guidelines will have the same degree of relevance to all proposed activities. Depending on the nature of the proposed activity and its location, some of the issues may be more relevant than others, and some may not be applicable at all. The level of detail provided on each issue should be appropriate to the level of significance of that environmental issue to the proposal.

As well as the issues identified in the guidelines, other significant matters may emerge during preparation of the EIS from environmental studies, public comments or other sources, which will need to be factored into the EIS. The assessment process may also change the understanding of the level of risk associated with some of the issues. This may in turn change the level of detail needed in the EIS to reflect the level of significance of that environmental issue to the proposal.

After the public consultation phase, additional information may be requested from the proponent in response to public and government agency submissions. This generally takes the form of a supplement to the EIS.

Objectives of the EIS

The EIS should provide:

- Information for individuals and groups to gain an understanding of the proposal, the need for the proposal, the alternatives, the environment that it could affect, the positive and negative environmental impacts that may occur and the measures that will be taken to maximise positive outcomes, and minimise any adverse environmental impacts, including specific management measures.
- A basis for public consultation and informed comment on the proposal.

- A framework against which decision makers, particularly the Board, and the relevant Planning Authority, can consider the proposal and determine the conditions under which any approval might be given.
- A demonstration that the proposal is consistent with the objectives of the relevant laws and policies, including the Tasmanian Resource Management and Planning System (RMPS) and the Environmental Management and Pollution Control System (EMPCS).

Structure and Formatting of the EIS

The following points should be considered when writing the EIS:

- The title page should include the proponent's name, the activity name, the proposal address or location, the EIS version number (where relevant) and the month and year of publication.
- The main text of the EIS should be written in a clear and concise style that is easily understood by the general reader.
- Assertions and assumptions should be supported by adequate argument and/or evidence, and evidence relied upon should be referenced.
- Technical terminology should be avoided as far as possible. The detailed technical data and supplementary reports necessary to support the main text should be included in appendices.
- All sources of information should be referenced and the style of referencing should be consistent throughout. An indication should also be given about how current the information is and how its reliability was tested. In particular, the degree of confidence attached to any predictions should be indicated.
- Information should be presented in maps, diagrams and site plans to enhance the level of understanding. All images must be of high quality, with all text readily readable, and should be capable of being readily copied and pasted into other documents such as a permit. For ease of comparison, all maps, plans and aerial photographs should be oriented in the same direction as far as practicable and a north direction arrow and scale should be included.
- When providing maps or referring to spatial databases, the coordinate reference system being used should be specified (i.e. Australian Geodetic Datum (AGD) or Geocentric Datum of Australia (GDA)).
- Any sensitive information should be provided in a separate, confidential appendix. A comment should be made in the EIS that the information has been provided in this way.
- Specific management measures must be clearly identified in the text and included in the summary table referred to in Section 9 of these guidelines.
- Where appropriate, information provided in other sections should be referenced to minimise duplication.

Submission of draft and final document

Close consultation with EPA Tasmania while preparing the EIS is recommended. It is advisable for the proponent to submit a draft EIS to EPA Tasmania for review before it is finalised. Please note that a draft document may be rejected without detailed review if it is incomplete, contains significant formatting or typographical errors, or does not comply with the Project Specific Guidelines. More than one draft may be necessary before the document is considered suitable for public release.

The EIS is to be submitted in electronic format (such as Microsoft Word), and suitable for publishing on the internet (PDF format). Printed copies may also be required at public consultation stage.

Once the proposal is advertised for public comment, copies of the EIS must be made available to the public on request, in either printed or electronic format. The EIS will also be available on the EPA website.

Commonwealth environmental assessment

The proposal was determined to be a controlled action on 26 October 2020 under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (EPBC Reference 2020/8797) and will require assessment and approval under the EPBC Act, in addition to Tasmanian State and Local government requirements. It was determined that the proposed action will have, or is likely to have, a significant impact on matters of national environmental significance (MNES), protected under Part 3 of the EPBC Act including:

- Listed threatened species and communities (sections 18 and 18A)
- Listed migratory species (sections 20 and 20A)
- World Heritage properties (sections 12 and 15A)
- National Heritage places (sections 15B and 15C).

The Commonwealth and Tasmanian Governments have signed a bilateral agreement relating to environmental impact assessment under section 45 of the EPBC Act, which effectively accredits the State assessment process. The EIS should specifically describe the implications of the proposal for the relevant EPBC Act controlling provisions. This information should be sufficient to allow the Commonwealth Minister for the Environment to make an informed decision on whether or not to approve the taking of the action, under Part 9 of the EPBC Act, for the purposes of each controlling provision.

The EIS should contain a summary table showing that it addresses the matters specified in Schedule 4 of the Commonwealth [Environment Protection and Biodiversity Conservation Regulations 2000](#).

False or misleading statements

Under section 43A of the EMPC Act, the EIS must not include information that is known to be false or misleading; and nothing should be omitted if it is known that without it the EIS would be false or misleading.

Contents of the EIS

Executive Summary

An executive summary of the EIS should be included to provide a clear and concise overview of the proposal, its environmental implications, the approvals process and the function of the EIS in the context of the approvals process.

For larger EISs, it is recommended that the executive summary be written as a stand-alone document, able to be provided on request to interested parties who may not wish to read or acquire the full EIS.

Table of Contents

A table of the contents of the report with reference to the relevant page numbers. It should also contain a list of figures and tables.

List of Abbreviations

A list of the abbreviations, acronyms and, if relevant, a glossary of terms used in the EIS.

Key Issues to be addressed

While the EIS should evaluate all potential effects of the proposal, it should be principally focused on the key issues identified in the table below. The level of detail provided on other issues should be appropriate to the level of significance of that issue for the proposal. Variables or assumptions made in the assessment must be clearly stated and discussed. The extent to which the limitations, if any, of available information may influence the conclusions of the environmental assessment should be discussed.

The key issues identified for this proposal, which should be the focus of the EIS, are:

Key Issues	
1	<i>Potential effects on threatened avifauna</i>
2	<i>Potential effects on threatened non-avian fauna</i>
3	<i>Potential effects on threatened flora and ecological communities</i>
4	<i>Potential effects on World Heritage properties and National Heritage places</i>
5	<i>Potential noise effects on surrounding residences</i>

The minimum survey requirements and studies required in relation to these key issues are provided in the relevant sections of these guidelines.

It should be noted that other matters deemed to be significant or matters that emerge as significant from environmental studies, public comments or otherwise during the course of the preparation of the EIS, should not be excluded from consideration.

The following guidelines may be of use in preparing the EIS:

- Commonwealth of Australia, 2010, *Survey Guidelines for Australia's Threatened Birds*
- Commonwealth of Australia, 2011, *Survey Guidelines for Australia's Threatened Mammals*
- Commonwealth of Australia, 2013, *EPBC Act Policy Statement 1.1 Significant Impact Guidelines – Matters of National Environmental Significance*
- Commonwealth of Australia, 2017, *EPBC Act Policy Statement 3.21 Industry Guidelines for Avoiding, Assessing and Mitigating Impacts on EPBC Act Listed Migratory and Shorebird Species*
- Environment Protection and Heritage Council, 2010, *National Wind Farm Development Guidelines – Draft, July 2010*
- New Zealand Standard NZS 6808:2010 *Acoustics – wind farm noise.*
- NSW Planning and Environment, 2016, *Wind Energy Guideline for State significant wind energy development, December 2016*
- Victoria Environment, Land, Water and Planning, 2016, *Policy and Planning Guidelines for the Development of Wind Energy Facilities in Victoria, January 2016.*

All discussions and conclusions should include a full justification based on best available information, including relevant conservation advices, recovery plans, threat abatement plans and guidance documents, if applicable. Commonwealth documents regarding listed threatened species and ecological communities and listed migratory species can be found at:

<http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

I. Introduction

Provide information on the following:

- Title of the proposal.
- Proponent details:
 - Name of proponent (legal entity)
 - Name of proponent (trading name)
 - Registered address of proponent
 - Postal address of proponent
 - ABN number
 - ACN number (where relevant).
- Contact person's details:
 - Name
 - Telephone
 - Email address.
- Activity operator details (if the operator will be a different entity to the proponent).
- General background information on the proponent, such as relevant development and operational experience.
- General background information on the proposal, including the objective of the proposal, the current status of the proposal, an overview of the principal components of the proposal, the proposal location, anticipated establishment costs, likely markets for the product, and the possibilities for future expansion.
- An examination of how the proposal relates to any other proposals that have been or are being developed, or that have been approved in the region affected by the proposal.
- Environmental legislation, standards and guidelines that will be applicable (such as policies, regulations and industry codes of practice).
- Other relevant Commonwealth, State and Local Government policies, strategies and management plans with which the proposal would be expected to comply.
- Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:
 - The person proposing to take the action.
- If the person proposing to take the action is a corporation, details of the corporation's environmental policy and planning framework should be described.

2. Proposal Description

General note

Where the proposal is to be subject to a permit application under the LUPA Act, the proposal description and specification of the site must be consistent with the intended or current permit application. Any works or activity that are for the purpose of the proposal (e.g. access works) must be included.

Provide a full description of the proposal, including construction, commissioning, operational and decommissioning phases, as well as any infrastructure and off-site ancillary facilities required for the proposal.

A detailed description should be provided of key physical components of the proposal, including their function, composition, size, capacity, operational life, technical and performance requirements, inter-relationships and method of construction, operation and maintenance.

The information listed below should be provided.

2.1 General

- The major items of equipment and on-site facilities should be described. Detailed technical information on major items of equipment may be included in appendices.
- Details of wind turbine specifications, ancillary facilities such as a switchyard, sub-station, new and up-graded roads/access tracks, underground infrastructure (i.e. cable network), overhead transmission lines, maintenance facilities and on-site amenities. The proposed generating capacity, number and dimensions of wind turbines must be specified.

2.2 Construction

- A step-by-step description and timetable for significant activities during the construction phase of the proposal. Indicative timeframes for the completion of major steps (wind farm, switchyard and ancillary facilities), and the likely sequencing of steps.
- Details of any pre-construction works, including site preparation works, and any temporary or permanent removal of vegetation including, stockpiling of vegetation, erosion control measures and the potential transport of pollutants (e.g. suspended solids) from areas of disturbance during construction.
- Details of any pre-clearance surveys to be carried out prior to commencement of construction, including flora and fauna and geotechnical studies.
- Estimates of the quantities of major raw materials required for construction (e.g. gravel, sand/aggregate and water) and how and where these will be sourced, i.e. on-site and/or off-site.
- Nature, capacity and location(s) of temporary construction equipment required on-site (such as cranes, concrete batch plants, construction camps).
- Volume, composition, origin, destination and route for vehicle movements likely to be generated during the construction phase, including a breakdown for over-dimension and heavy vehicles.
- Information on the number of construction workers required in the various stages of construction, sources of labour, transport of workers to and from the site, accommodation, and support servicing requirements.
- Proposed hours per day and days per week of construction activities.

2.3 Commissioning

A step-by-step description of major commissioning activities following installation of equipment. Indicative timeframes for the completion of major steps, and the likely sequencing of steps. The point at which commissioning will be considered completed should be described.

2.4 Operation and maintenance

- Description of the operational and maintenance requirements (e.g. frequency of maintenance activities, equipment access and hardstand requirements) for the wind turbines.
- Details of the design life for major project components.
- The volume, composition, origin, destination and route for vehicle movements likely to be generated during the operational phase.
- The hours of operation.

2.5 General location map

A general location map (e.g. 1:25,000 scale or better as appropriate) which identifies the following is required:

- The location of the proposal site
- Topographical features, aspect and direction of drainage
- Road access to and from the site
- Location of waterways and drains (including ephemeral)
- The distance(s) to any nearby sensitive uses (such as residences)
- Electricity transmission lines / substations
- Boundaries of the property on which the proposal is located
- Surrounding land tenure
- Surrounding land use (identify areas of conservation or recreational significance)
- Surrounding land zoning in the local government planning scheme.

2.6 Site plan

Site plans are required which identify the proposal site and which include the following (where relevant).

- Definition of the land on which the activity will take place, and its boundary, by means of land title information, map coordinates or other means. This must be consistent with any intended permit application under the LUPA Act. Coordinates of the land should be provided.
- A site plan showing the location of all major items of equipment (including wind turbine layout) and facilities.
- The position of buildings and significant structures on the site (existing and proposed).
- The route of any pipelines, tracks or similar means of transporting on-site materials.
- The location(s) of raw materials storage areas.
- The locations of temporary and permanent storage areas for fuels, oils, reagents and other hazardous goods or chemicals.
- The locations of stormwater collection systems and details of drainage control measures such as cut-off drains and sediment settling ponds, including location of all discharge points (stormwater or other).
- Details of any screening vegetation.
- The location(s) of loading or unloading areas.
- The location(s) of any monitoring sites.

2.7 Visual description

Describe the impacts of the proposal on the visual landscape.

- The description should take account of the appearance of the proposal from significant vantage points. These should include points both inside and outside the site and should include viewpoints likely to be visited by tourists or recreational users.
- Presentation of 'artists impressions', photomontages or visual modelling is recommended.

The provision of a visual impact assessment by a suitably qualified person is required. The assessment should utilise a broadly accepted methodology to determine the acceptability of the visual impact arising from the proposal. The visual impact assessment should analyse the acceptability of the visual impact having regard to visual aspects of the proposal, the degree of

contrast and integration, field of view, existing landscape characteristics and visual compatibility of the proposal.

In addition, if there are any residents in the immediate vicinity of the proposal:

- Shadow flicker should be modelled to assess the likelihood of disturbance to any residents. The results of the modelling should be provided in the EIS with a discussion of how this will be managed or minimised.
- A blade glint assessment should be included in the EIS to determine the likelihood of disturbance to any residents.

2.8 Off-site infrastructure

Any new infrastructure or off-site ancillary facilities required to allow the proposal to proceed should be described (for example water supply, electricity supply, roads or other transport infrastructure).

3. Project Alternatives

The rationale for the particular project proposed should be described.

Describe the site selection process, including site selection criteria, alternative sites considered and an assessment of those alternatives, including the alternative of taking no action. The assessment should compare alternatives according to clearly defined environmental, social, economic and technical considerations, and provide a justification for the preferred site. The effect that any community consultation undertaken had on the selection process should be detailed.

A critique of other available technologies and the reason for the selection of the preferred technology, including from an environmental perspective, should be included where relevant. Transparency around alternatives and the criteria on which decisions have been based is encouraged as it can lead to better outcomes. Discuss the short, medium and long-term advantages and disadvantages of the alternatives.

For any part of the proposal where alternative technologies, materials, design options or management practices with different environmental consequences may exist, the alternatives should be identified, their environmental performance evaluated and the reason for the proposed choice justified.

Alternatives should have regard to best practice environmental management, including those measures listed under section 4(2) of the EMPC Act.

4. Consultation

Details of the nature and results of public consultation undertaken by the proponent during project planning and preparation of the EIS, as well as any proposals for further public consultation during and beyond project implementation should be provided.

Early community engagement often leads to better outcomes for all and is strongly encouraged. The Board has produced a guide to community engagement which is available on the EPA website at: <http://epa.tas.gov.au/assessment/assessment-process/guidance-documents>.

Refer also to the National Wind Farm Commissioner's website for best practice community engagement at: <https://www.nwfc.gov.au/publications/best-practice>.

Comments from the following agencies are provided for information.

- Parks and Wildlife Service Tasmania

The proposed wind farm will be highly visible from several locations within the Tasmanian Wilderness World Heritage Area (TWWHA) and understanding the likely impact on aesthetic wilderness and natural beauty of the TWWHA should be considered.

- TasNetworks

TasNetworks has had some early engagement with the proponent (Epuron). TasNetworks looks forward to seeing more details on the proposal as the matter progresses.

- Civil Aviation Safety authority

An aeronautical study that will identify any possible aviation safety risks and the need for mitigation of any risks is required to be undertaken by an aviation consultant. The study should provide a detailed assessment of the potential impacts of the wind farm on aviation activities and demonstrate how an acceptable level of aviation safety can be maintained. An aeronautical study should address all of the National Airports Safeguarding Framework (NASF) key considerations.

- Aboriginal Heritage Tasmania

Aboriginal Heritage Tasmania (AHT) advised that the Guildford and Surry Hills area is known to be culturally rich and there are a significant number of Aboriginal heritage sites located within the proposed activity area. AHT expects that a comprehensive Aboriginal heritage assessment will be undertaken to identify whether the proposed activity or related infrastructure will impact any Aboriginal heritage and to offer mitigation advice. This assessment should be undertaken jointly by a Consulting Archaeologist and Aboriginal Heritage Officer following the standards set in the *Aboriginal Heritage Standards and Procedures*. Once the Aboriginal heritage assessment has been completed, a copy of the final draft report should be forwarded to AHT for review/comment.

5. The Existing Environment

Describe the proposed site location and provide an overview of the existing environment, which may be affected by construction, and operation of the proposal, including areas associated with any ancillary activities.

Include details of salient features of the existing environment and, where appropriate, include maps, plans, photographs, diagrams or other descriptive detail.

The following details should be included.

5.1 Planning aspects

- If a permit is required for the proposal under the LUPA Act provide:
 - Use Class of the proposed activity under the applicable Planning Scheme.
 - Permissibility of the activity under the applicable Planning Scheme.
- Information on land tenure and property boundaries of the proposed site, with certificate of title details.
- Land zonings for the proposed site and surrounding areas.
- Any rights of way, easements and covenants affecting the site.

- Land use and planning history of the site, including the potential for site contamination¹, present use and any existing buildings and significant structures.
- A description of land use and ownership in the vicinity of the site and those areas which may be affected by the proposal, including:
 - The location and nature of industrial facilities.
 - Any sensitive uses² or residential zones within applicable attenuation distances including the location of individual residences, schools, hospitals, caravan parks and similar sensitive uses, and the location of any tourist or recreation facilities or routes (such as camping areas, picnic areas, walking tracks, historic routes).
 - Any proposed or potentially sensitive uses within this distance of the proposal site, which have been or are likely to be granted approval under the local planning scheme, should also be considered.

5.2 Environmental aspects

- A description of the general physical characteristics of the site and surrounding area, including topography, local climate, geology, geomorphology, soils (including erodibility and acid sulphate soils), vegetation, fauna, groundwater and surface drainage (including waterways, lakes and wetlands).
- A description of natural processes of particular importance for the maintenance of the existing environment (e.g. fire, flooding, etc).
- Any existing conservation reserves located on or within 500 metres of the site.
- Any high quality wilderness areas identified in the *Tasmanian Regional Forest Agreement* in the vicinity of the site.
- Information on species, sites or areas of landscape, aesthetic, wilderness, scientific or otherwise special conservation significance which may be affected by the proposal. Relevant information resources include the LIST (www.thelist.tas.gov.au) and the Natural Values Atlas (<https://www.naturalvaluesatlas.tas.gov.au>).
- An assessment of the vulnerability of the site to natural hazards (e.g. flooding, seismic activity, fire, landslips or strong winds).
- Any available ambient monitoring results in the vicinity of the proposed development (in tabular or graphical form). The results may be summarised (e.g. as annual averages) if the summary will provide adequate information.
- A description of the World and National Heritage values relevant to the action.

5.3 Socio-economic aspects

Briefly describe the existing social and economic environment that may be affected by the proposal, which may include information on the following:

- A summary of the social or demographic characteristics of the population living in the vicinity of the proposal site, identifying any special characteristics which may make people more sensitive to impacts from the proposal than might otherwise be expected.
- A summary of the characteristics of the local and regional economy.

¹ Information on potentially contaminating activities and contaminated site assessment can be found online at <http://epa.tas.gov.au/regulation/contaminated-sites>.

² Defined in the State Planning Provisions as 'a residential use or a use involving the presence of people for extended periods except in the course of their employment such as a caravan park, childcare centre, dwelling, hospital or school.'

6. Potential Impacts and their Management

Guide to preparing this section

While some details of the proposal may not be finalised at the time the EIS is submitted, the information in the document should be as up to date as possible. Where information is unavailable or details have not yet been finalised, estimates and the range of alternative options should be provided. However, sufficient technical detail must be provided to enable an appropriate level of assessment. For each potential impact the following should be discussed.

Existing conditions

Outline the existing conditions relevant to the impact.

Performance requirements

Identify the environmental performance requirements to be achieved for each environmental impact and provide evidence to demonstrate that these can be complied with. These may be standards or requirements specified in legislation, codes of practice, state policies, national guidelines (including relevant recovery plans and conservation advices) or as determined by agreement with the assessing agencies. Industry best practice standards should be referred to where appropriate. **Unsupported assertions that performance requirements will be achieved will not be considered adequate.**

Potential impacts

Outline the short-term and long-term potential environmental, social and economic impacts of the proposal (positive and negative) through all stages, including construction, operation and closure, in the absence of special control measures. Any foreseeable variations in impacts during the start-up and operational phases should be identified.

Include an analysis of the significance of the relevant impacts. When determining significance of impacts to MNES, the EIS should refer to the *EPBC Act Policy Statement 1.1 Significant Impact Guidelines – Matters of National Environmental Significance*.

The level of detail provided on each issue should be appropriate to the level of significance of that environmental issue to the proposal.

The evaluation of potential impacts should identify **plausible worst case consequences**, the vulnerability of the affected environment to the potential impacts, and the unpredictability or reversibility of the impacts. Potential cumulative impacts of this proposal in light of other activities underway or approved also need to be addressed. Interactions between biophysical, socio-economic and cultural impacts should be identified.

Predictions and evaluations of impacts should be based on scientifically supportable data. Direct, indirect, cumulative and facilitated impacts should all be identified. The methodologies used or relied on should be referenced, together with the relevant research and investigations supporting them. Assumptions, simplifications and scientific judgements should be stated clearly, and the nature and magnitude of uncertainties should be clearly defined. Where relevant, the choice of a particular methodology over alternative methodologies should be explained. Where impacts are not quantifiable, they should be adequately described.

Where positive benefits are claimed it will generally be appropriate to explain what measures are to be taken to ensure that those positive outcomes are realised and sustained.

Avoidance and mitigation measures

Describe the measures proposed to avoid or mitigate potential adverse heritage and environmental impacts (having regard to best practice environmental management as defined in

EMPCA and to heritage management aims in the *Tasmanian Wilderness World Heritage Area Management Plan (2016)*) in order to achieve the environmental performance requirements (such as through pollution control technology or management practices). The extent to which they will overcome the anticipated impacts should be specified. The ongoing management and monitoring measures, and the party responsible for each measure. Where there are clear, alternative avoidance or mitigation measures for a particular adverse environmental impact, the alternatives should be reviewed and the preferred option justified. Discussion of the achievability of the measures, including affordability, should be included.

Where pollution control equipment and/or treatment processes are key factors in achieving satisfactory environmental performance, contingencies in the event of breakdown or malfunction of the equipment or processes should be discussed. It should be demonstrated that the maintenance of pollution control equipment can be provided for without causing performance requirements to be exceeded.

Where measures to control heritage and environmental impacts are necessary, but will not be undertaken by the proponent, the means by which the proponent will ensure that the necessary measures are implemented should be identified (e.g. lease conditions, trade waste agreement, contractual arrangement or other binding third party commitment). **Mitigation measures over which the proponent has no control will generally not be considered adequate.**

Specific measures can be presented in the form of a management plan, such as an Environmental Management Plan (EMP) that sets out the framework for management, mitigation and monitoring of relevant impacts of the action, including any provisions for independent environmental auditing. The EMP needs to address the project phases (construction, operation, decommission) separately.

Assessment of net impacts

An assessment of the overall impacts of the development on heritage and the environment after allowing for the implementation of proposed avoidance and mitigation measures. This should include an evaluation of the significance of impacts, the potential for emissions to cause environmental and health impacts and comparison with state, national and international regulations and standards. Any net benefits likely to result from the proposal should be identified.

Discuss the impacts of the proposal in terms of the constraints or benefits it may place on the current or future use of land within the proposal site and surrounding area as a result of environmental impacts or emissions, including impacts on other uses, particularly sensitive uses.

Offsetting unavoidable adverse impacts

If adverse residual heritage and environmental impacts from the proposal are considered unavoidable despite the adoption of best practice heritage and environmental management avoidance and mitigation measures, then proposals to offset such impacts should be detailed. For example, if the loss of conservation values, community assets or amenities is considered unavoidable, measures to compensate for those losses should be proposed in proportion to the loss. Any offset actions proposed must be demonstrated to be 'real' actions. That is, **the offset actions must have a measurable and relevant benefit which would otherwise not have occurred.**

Offsetting for significant residual impacts to MNES

Describe the residual impacts on MNES that are likely to occur as a result of the proposed action in its entirety, after proposed avoidance and/or mitigation measures are considered. If applicable, this should include the reasons why avoidance or mitigation of impacts cannot be reasonably achieved.

If residual impacts are proposed to be offset provide an offset package to compensate for residual impacts to MNES. This should consist of an offset proposal and key commitments and management actions for delivering and implementing the proposed offset (e.g. an Offset Management Plan). Note, an offset management plan should be prepared as a separate document and attached as an appendix to the documentation.

Offsets for heritage values should improve the integrity and resilience of the heritage values involved. Offsets must deliver an overall conservation outcome that improves or maintains the ongoing viability of the species and ecological communities, as compared to what is likely to have occurred if neither the action nor the offset had taken place. The proposed offset must meet the requirements of the Commonwealth *EPBC Act Environmental Offsets Policy* (October 2012) available at: www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy.

The *Offset Assessment Guide* can be used as a guide to calculate the area of offset required to adequately compensate for the residual impacts of the project, it is available at: www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy. The offset proposal will be assessed based on the information provided in the offsets proposal using the offsets assessment guide.

Offsets required by the State can contribute to offset obligations under the EPBC Act if those offsets also meet the requirements of the *EPBC Act Environmental Offsets Policy*.

6.1 Key Issue 1: Threatened avian fauna

General information

Discuss impacts of the wind farm and any other ancillary infrastructure on threatened avian fauna including:

- Impacts on species and habitats, with particular reference to rare and threatened species, migratory species and habitats, including those listed under the relevant Schedules of the Commonwealth EPBC Act and the Tasmanian *Threatened Species Protection Act 1995* (TSP Act).
- A description of the matters of national environmental significance that are within the proposal area and surrounding areas including but not limited to:
 1. Tasmanian Wedge-tailed Eagle (*Aquila audax fleayi*) – Endangered
 2. Masked Owl (Tasmanian) (*Tyto novaehollandiae castanops*) – Vulnerable
 3. Orange-bellied Parrot (*Neophema chrysogaster*) – Critically Endangered
 4. Swift Parrot (*Lathamus discolor*) – Critically Endangered
 5. White-throated Needletail (*Hirundapus caudacutus*) – Vulnerable, migratory
 6. Curlew sandpiper (*Calidris ferruginea*) – Critically Endangered, migratory
 7. Eastern curlew (*Numenius madagascariensis*) – Critically Endangered, migratory
 8. Common Greenshank (*Tringa nebularia*) – migratory
 9. Common Sandpiper (*Actitis hypoleucos*) – migratory
 10. Fork tailed swift (*Apus pacificus*) – migratory
 11. Latham’s Snipe (*Gallinago hardwickii*) – migratory
 12. Pectoral Sandpiper (*Calidris melanotos*) – migratory
 13. Satin flycatcher (*Myiagra cyanoleuca*) – migratory
 14. Sharp-tailed Sandpiper (*Calidris acuminata*) – migratory.
- Where impacts cannot be avoided, proposed measures to mitigate and/or compensate adverse impacts on biodiversity and nature conservation values should be presented.
- Information about the identification of threatened avian fauna including survey data and historical records. Details of surveys undertaken, including survey effort, timing and an assessment of the adequacy of the surveys.
- Information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the proposed action.

Surveys should be done in accordance with the *Guidelines for Natural Values Surveys related to Development Proposals* (‘the Guidelines’ see: <http://dpiwwe.tas.gov.au/Documents/Guidelines%20for%20Natural%20Values%20Surveys%20related%20to%20Development%20Proposals.pdf>), and Commonwealth of Australia, 2010, *Survey Guidelines for Australia’s Threatened Birds*, and other relevant guidelines.

It is requested that all survey data are submitted to the Natural Values Atlas within 30 days of the survey.

Bird Utilisation Surveys

Bird utilisation surveys should be carried out across the proposed project footprint to determine utilisation of the area by avian fauna species. These surveys should be carried out in the following manner:

- Surveys should be undertaken by suitably qualified persons.
- Multiple observers should be used for each survey.
- Five-day surveys are recommended at the mid-point of each season (summer, autumn, winter and spring), undertaken from sunrise to sunset.
- Surveys should be undertaken over a minimum period of one year.

Targeted eagle utilisation surveys

Impacts of the proposed windfarm are likely to include mortality or injury of avifauna through collision with turbines and transmission lines as well as habitat loss and disturbance. Species of particular concern include the white-bellied sea-eagle (*Haliaeetus leucogaster*) and the wedge-tailed eagle (*Aquila audax subsp. fleayi*).

Targeted utilisation surveys should be carried out across the proposed project footprint to determine utilisation of the area by eagle species. These surveys should be carried out in the manner outlined above for bird utilisation surveys, and should also include:

- An additional year of surveys (i.e. over at least two summers, two autumns, two winters and two springs) since utilisation by WTEs has been known to vary significantly between years. It is recommended that a review of the findings after Year 1 is prepared and submitted to the EPA and DAWE, prior to commencement of a second year of surveys as there may be adequate information to justify changes to or no further utilisation surveys.
- Survey methodology should be such that spatial use of the site (any favoured areas, any common flight paths, etc.) can be determined.
- Survey data presented in a manner that is representative of the 3-dimensional nature of movement patterns (e.g. contour maps) for different seasonal activity periods and overlain with the proposed infrastructure locations for context. The siting of turbines, distribution/transmission lines and other infrastructure should take into account the results of the utilisation surveys in order to avoid or minimise potential impacts.
- Survey coverage must be sufficient to inform a robust understanding of site utilisation and support the application of collision risk modelling.

It is noted that the project site is heavily forested and relying solely on ground-based utilisation surveys may not provide sufficient information regarding the use of the site by eagles. Therefore, the utilisation survey should incorporate the use of GPS-harnessed eagles (adults) to assess flight patterns.

The proponent should consult with relevant specialists/researchers to design an appropriately informative study/approach. It should be noted that some eagles in the area may be GPS-tagged over the next year or two as part of an FPA-UTAS research project that investigates disturbance to eagles from forestry activities, and some coordination/collaboration in this work may be possible.

Figure 1 in the Notice of Intent shows the majority of turbines are located on ridge-tops; however the updrafts rising from these same ridges are likely to be extensively used by eagles and the strings of turbines along them could well pose a much higher risk of collision than on less

undulating wind farm sites. Therefore, particular attention should be given to ensuring eagle utilisation surveys are representative of the range of conditions and the prevailing conditions.

A Collision Risk Model (CRM) to support the proposal should be provided. A CRM should be used in conjunction with other survey and assessment methods, such as bird utilisation surveys to identify potential impacts to eagle species from the proposed development.

CRM analysis must: be based on and include justification against up-to-date scientific literature and understanding; be supported by an appropriate level of site utilisation data; provide a robust assessment of any uncertainties, assumptions or limitations; and provide clear discussion of the outcomes.

The Proponent should submit a proposal outlining how the CRM analysis will be undertaken for further consultation with relevant agencies.

Eagle nest search and productivity assessment

It is noted that an aerial eagle nest search has already been undertaken in suitable habitat within 1 km of proposed turbine locations. There are known nests (and potentially unknown nests) outside of the area searched, which may comprise additional territories that extend into the proposed turbine locations, therefore nest searches should be undertaken out to 3 km from proposed turbines, to better understand the use of the project site by eagles and the potential impact upon them. The results should be used to inform development activities and infrastructure layout.

Nest searches should be conducted outside the eagle breeding season (July-January inclusive), in accordance with the FPA Technical Note 1 (available at: www.fpa.tas.gov.au/_data/assets/pdf_file/0012/110208/Fauna_Tech_Note_1_Eagle_nest_management_May_2015.pdf).

Eagle nest searches will also be required to be undertaken prior to finalising the final design of all infrastructure as well as prior to construction to identify any new nests.

Nest productivity assessments should be carried out for all known nests within 3 km from the proposed turbines annually prior to commissioning.

The EIS should outline how new nests will be detected, reported and managed post-commissioning.

Collision Management

Outline how collisions with wind turbines and associated infrastructure are proposed to be avoided or mitigated and provide an offset strategy to address any residual impacts expected over the life of the wind farm. If technology based mitigation or avoidance approaches are proposed, i.e. radar or tracking technology, then an assessment of their effectiveness at the site should be presented. It is recommended that this is informed by results from their use at existing wind farms, particularly in the Tasmanian context.

Collision Monitoring

An avifauna monitoring program is required to outline how collisions (injuries and mortalities) will be detected and reported, and how appropriate management responses will be implemented. Refer to avian mortality monitoring plan guidelines in Appendix B for guidance. The EIS should also outline how the proponent intends to compensate for non-detections (i.e. birds that collide with turbines but are not detected during collision monitoring), particularly given the forested nature of the site and the likely difficulty in detecting all collisions.

Carcass Management

Details of how eagle food resources (e.g. carcasses) will be managed across the site to address the collision risk (with turbines, infrastructure and vehicles) should be outlined. Monitoring along roadsides, around turbines and beneath distribution lines should be considered. The potential implications of changes to land use pre-, during and post-construction, such as changes to forestry activities should be considered.

On-going disturbance

Some of the proposed turbine locations appear to require the use of existing (gravel) roads within 1 km (bare-earth) line-of-sight of some eagle nests. The EIS should outline how disturbance to eagles within the breeding season will be avoided in areas where roads pass within 1 km of a turbine (e.g. if forest has been removed through harvesting or fire, resulting in line-of-sight to the nest, then alternative roads will be used).

Key legislative and policy requirements

Regard should be given to the *Australia's Biodiversity Conservation Strategy 2010-2030*, the draft *Tasmania's Nature Conservation Strategy* and the *Threatened Species Strategy for Tasmania*.

All surveys should refer to relevant survey guidelines, including an assessment of the adequacy and appropriateness of the surveys with respect to these guidelines. Documents regarding listed threatened and migratory species can be found at: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.

Assessments relating to EPBC Act listed threatened species and ecological communities should address the relevant Recovery Plans, Threat Abatement Plans and Approved Conservation Advices.

6.2 Key Issue 2: Threatened non-avian fauna

General information

Discuss impacts of the wind farm and any other ancillary infrastructure on threatened terrestrial fauna species including:

- Impacts on species and habitats with particular reference to rare and threatened species and habitats, including those listed under the relevant Schedules of the Commonwealth EPBC Act and the Tasmanian *Threatened Species Protection Act 1995* (TSPA).
- A description of the matters of national environmental significance that are within the proposal area and surrounding areas, including but not limited to:
 1. Eastern Quoll (*Dasyurus viverrinus*) – Endangered
 2. Ptunarra Brown Butterfly (*Oreixenica ptunarra*) – Endangered
 3. Tasmanian Devil (*Sarcophilus harrisii*) – Endangered
 4. Eastern Barred Bandicoot (Tasmania) (*Perameles gunnii gunnii*) – Vulnerable
 5. Giant Freshwater Crayfish (*Astacopsis gouldi*) – Vulnerable
 6. Spotted-tail Quoll (Tasmanian population) (*Dasyurus maculatus maculatus*) – Vulnerable
- Where impacts cannot be avoided, proposed measures to mitigate and/or compensate adverse impacts on biodiversity and nature conservation values should be presented.
- The potential for migration and/or introduction of pests and animal diseases as a result of the proposal.

- Reference should be made to potential impacts of vehicle movements on wildlife as a result of the proposal, and to mitigation measures for any wildlife priority areas.
- Any new records of threatened fauna recorded during surveys should be submitted to the Natural Values Atlas (NVA) within 30 days following surveys.
- Information about the identification of threatened terrestrial fauna including survey data and historical records. Details of surveys undertaken, including survey effort, timing and an assessment of the adequacy of the surveys.
- Information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the proposed action.

The Land should be surveyed in accordance with the *Guidelines for Natural Values Surveys*, refer section 6.1 and the Commonwealth of Australia, 2011, *Survey Guidelines for Australia's Threatened Mammals*, and other relevant guidelines.

Tasmanian devils (*Sarcophilus harrisi*) and spotted-tailed quolls (*Dasyurus maculatus subsp. maculatus*)

Surveys to inform potential impacts on the Tasmanian Devil should be carried out in accordance with the *Tasmanian Devils - Devil Survey Guidelines and Advice* (available at: [http://www.dpipwe.tas.gov.au/Documents/Devil Survey Guidelines and Advice.pdf](http://www.dpipwe.tas.gov.au/Documents/Devil_Survey_Guidelines_and_Advice.pdf)).

In the absence of specific guidelines for quolls, the Devil guidelines can be applied, given they have similar habitat requirements and are susceptible to a similar range of threats.

Surveys, assessment and proposed management measures should address all potential impacts to the species, including vegetation clearance/ground disturbance, increased habitat fragmentation, impacts to dens, changes to food resources, roadkill management, changes in land use and changes to fire regimes.

Suitable denning habitat is required to be mapped in relation to the position of proposed infrastructure to assist in determining a site layout that minimises impacts on devils and quolls. Once the final layout has been determined, den surveys should be conducted prior to construction in accordance with the Devil guidelines. Any dens that are proposed to be destroyed will require a permit to take under the *Nature Conservation Act 1999*.

In relation to assessing roadkill risk, the EIS should include a summary (e.g. table) showing what new roads/tracks are proposed, and how much distance they cover. An analysis of the expected vehicle movements during both construction and operational phases should also be provided, and a comparison made with existing vehicle movements.

The EIS should include an assessment of the potential for roadkill during both construction and operational phases and provide mitigation measures that will address this risk. Identification of high-risk roadkill areas may help to inform mitigation and offset considerations for the Tasmanian devil and spotted-tailed quoll.

If after avoidance and mitigation measures are applied, residual impacts to the species are identified, then an offset proposal should be included in the EIS.

Ptunarra Brown Butterfly

The site of the proposed wind farm is a hotspot for the threatened Ptunarra Brown Butterfly (*Oreixenica ptunarra*). The EIS should provide information regarding the potential impacts of the proposal on this species, and how these will be avoided or mitigated. As a minimum this should include mapping of potential habitat and known locations for the species.

Disturbing the ground adjacent to Ptunarra Brown Butterfly locations has been shown to lead to an increase in European wasp numbers and consequently increased predation on the butterflies. To allow for a suitable buffer, it is recommended that construction areas (e.g. hard stands and roads) are sited a minimum distance of 500 m away from Ptunarra Brown Butterfly habitat.

Grey Goshawk

Given that grey goshawks (*Accipiter novaehollandiae*) were observed during eagle nest surveys, it is recommended that the EIS address the potential for impacts on this species and how these will be managed.

Key legislative and policy requirements

Regard should be given to the *Australia's Biodiversity Conservation Strategy 2010-2030*, the draft *Tasmania's Nature Conservation Strategy* and the *Threatened Species Strategy for Tasmania*.

All surveys should refer to relevant survey guidelines, including an assessment of the adequacy and appropriateness of the surveys with respect to these guidelines. Documents regarding listed threatened and migratory species can be found at: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.

Assessments relating to EPBC Act listed threatened species and ecological communities should address the relevant Recovery Plans, Threat Abatement Plans and Approved Conservation Advices.

6.3 Key Issue 3: Threatened flora and ecological communities

Discuss impacts of the wind farm and any other ancillary infrastructure on threatened flora species and ecological communities including:

- A map (or maps) of existing vegetation and type, threatened species and threatened native vegetation communities.
- Impacts on flora, vegetation communities and habitat, with particular reference to rare and threatened species, communities and habitats, including those listed under the relevant Schedules of the Commonwealth EPBC Act and the Tasmanian TSP Act.
- A description of the matters of national environmental significance that are within the proposal area and surrounding areas, including but not limited to:
 1. Tasmanian Forests and Woodlands dominated by black gum or Brookers Gum (*Eucalyptus ovata* / *E. brookeriana*) – Critically Endangered
 2. Alpine Sphagnum Bogs and Associated Fens – Endangered
 3. Lowland Native Grasslands of Tasmania – Critically Endangered
 4. Crowded Leek-orchid (*Prasophyllum crebriflorum*) – Endangered
 5. Hoary Sunray (*Leucochrysum albicans* subsp. *tricolor*) – Endangered
 6. Native Wintercress (*Barbarea australis*) – Endangered
 7. Clover Glycine (*Glycine latrobeana*) – Vulnerable
 8. Maidenhair Spleenwort (*Asplenium hookerianum*) – Vulnerable.
- Clearing of native vegetation and habitat associated with the construction and maintenance of the proposal and the impact of any clearing on sites, species or ecological communities of special conservation significance, including any impact on the comprehensive, adequate and representative reserve system identified as part of the Tasmanian RFA, maintenance of forest communities under the Tasmanian Government *Policy for Maintaining a Permanent Native Forest*

Estate 2017, and wildlife habitat strips under the *Tasmanian Forest Practices Code 2015* and on non-forest communities.

- How potential impacts to threatened flora, communities and habitats will be avoided.
- Where impacts cannot be avoided, proposed measures to mitigate and/or offset adverse impacts on biodiversity and nature conservation values must be presented.
- The potential for migration and/or introduction of pests, weeds and plant and animal diseases as a result of the proposal.
- Rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity, including any proposed seed collection and progressive rehabilitation program.
- Any new records of threatened flora recorded during surveys should be submitted to the Natural Values Atlas (NVA) within 30 days following surveys.
- Information about the identification of threatened flora and vegetation communities including survey data and historical records. Details of surveys undertaken, including survey effort, timing and an assessment of the adequacy of the surveys.
- Information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the proposed action.

Threatened flora surveys

Ecological surveys are required to be undertaken in all areas proposed to be impacted by the proposed development. Surveys should be conducted at appropriate times of the year to detect threatened flora that may occur in the area (i.e. during the flowering periods of candidate species). Surveys should be done in accordance with the *Guidelines for Natural Values Surveys related to Development Proposals* ('the Guidelines' refer section 6.1 above).

A permit to take will be required under the TSPA, if "taking" (as defined under the TSPA) threatened flora (e.g. for the purposes of identification) is necessary.

Threatened vegetation communities

Vegetation community ground surveys and vegetation mapping of the project site is required to be undertaken, to verify the actual distribution and condition of communities listed under the NC Act.

Any discrepancies between field survey results and the existing TASVEG layer should be submitted directly to the Natural Values Atlas.

Weeds & diseases

The EIS should address the potential for project activities to result in the introduction and/or spread of weeds, pests and diseases. Mapping of weed occurrences should be included in the natural values survey, particularly for areas proposed to be disturbed by the development. Information should be provided in the EIS regarding the measures that will be taken to minimise this risk and to avoid associated potential impacts on threatened flora and fauna.

Key legislative and policy requirements

Regard should be given to the *Australia's Biodiversity Conservation Strategy 2010-2030*, the draft *Tasmania's Nature Conservation Strategy* and the *Threatened Species Strategy for Tasmania*. *Nature Conservation Act 2002*, *Forest Practices Act 1985*, *Forest Practices Regulations 2017*, the *Forest Practices Code 2015* and *Policy for Maintaining of the Permanent Native Forest Estate 2017*.

All surveys should refer to relevant survey guidelines, including an assessment of the adequacy and appropriateness of the surveys with respect to these guidelines. Documents regarding listed threatened species and ecological communities can be found at:

<http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.

Assessments relating to EPBC Act listed threatened species and ecological communities should address the relevant Recovery Plans, Threat Abatement Plans and Approved Conservation Advices.

6.4 Key Issue 4: World Heritage properties and National Heritage places

The Tasmanian Wilderness World Heritage listing can be found at:

<https://whc.unesco.org/en/list/181>

The Australian National Heritage Database can be found at: <http://www.environment.gov.au/cgi-bin/ahdb/search.pl>

Provide a description of the Tasmanian Wilderness World Heritage area and National Heritage place with reference to its adopted Statement of Outstanding Universal Value and the Summary Statement of Significance (as available).

Provide a description of the listed aesthetic values of the Tasmanian Wilderness found in the *Tasmanian Wilderness World Heritage Area Management Plan* (2016), and the listing in the Australian National Heritage Database (place ID 105695).

Assess impacts to heritage values of the Tasmanian Wilderness World Heritage area and National Heritage place that will be notably altered, modified, obscured or diminished as a result of the action, arising from the location of the wind farm. This must include:

- A topographic map (or maps) of the relevant parts of the Tasmanian Wilderness and the project area. Ensure that the maps include elevations in metres ASL (above sea level) of significant vantage points within the Tasmanian Wilderness and of wind farm and ancillary infrastructure. Ensure the maps provide distances from the proposed wind farm and ancillary infrastructure from those vantage points.
- Provide visual modelling and/ or ‘artist impressions’ of wind farm and ancillary infrastructure that are potentially visible from places of exceptional natural beauty and aesthetic importance within the Tasmanian Wilderness World Heritage Area and National Heritage place, including but not limited to:
 - i. Cradle Mountain Lake St Clair National Park
 - ii. Dove River Conservation Area
 - iii. Dove River Recreation Reserve
 - iv. Swift Creek Conservation Area
 - v. Borradaile Recreation Reserve
 - vi. Mole Creek Karst National Park
 - vii. Devils Gullet State Reserve
 - viii. Central Plateau Conservation Area
 - ix. the Great Western Tiers Conservation Area; and
 - x. the Walls of Jerusalem National Park.
- Provide results of any modelling and analysis of impacts such as “line of sight” and elevation modelling.

- Provide an assessment of visual impacts of the wind farm and any ancillary infrastructure on the Tasmanian Wilderness, in particular to places of exceptional natural beauty and aesthetic importance listed in the *Tasmanian Wilderness World Heritage Area Management Plan (2016)* and the listing in the Australian National Heritage Database where from the wind farm and ancillary infrastructure is visible. This assessment must also consider the likely duration of impacts to the Tasmanian Wilderness as a result of the proposed action. The visual impact assessment must be undertaken by a suitably qualified person using a broadly accepted methodology.
- Where impacts cannot be avoided, proposed measures to mitigate and/or offset adverse impacts on the listed values must be presented.

Legislative and policy requirements

The assessment should address the *Tasmanian Wilderness World Heritage Area Management Plan (2016)*, the World Heritage Management Principles and the National Heritage Management Principles.

6.5 Key Issue 5: Noise emissions

Discuss impacts of the proposal on pre-existing noise levels (during both the construction and operational phases), including:

- Identifying and describing all major sources of noise.
- A map of the location(s) of all major sources of noise.
- The potential for noise emissions (during both the construction and operational phases) to cause nuisance for nearby land users, particularly at noise sensitive premises.³

Noise modelling is required.

Noise assessment should follow the general requirements of section 17 of the Noise Measurement Procedures Manual, Second Edition July 2008.

Legislative and policy requirements

Consideration should be given to the requirements of the Tasmanian Environment Protection Policy (Noise) 2009 (refer <https://epa.tas.gov.au/policy/statutory-policies/state-policies-and-environmentprotection-policies/environment-protection-policy-%28noise%29-2009>), the New Zealand Standard NZS 6808:2010 Acoustics – wind farm noise and the Tasmania Noise Measurement Procedures Manual (refer https://epa.tas.gov.au/Documents/Noise_Measurement_Procedures_Manual_2008.pdf).

6.6 Air Quality

Discuss potential impacts of the proposal on the local and regional air environment, including:

- Identifying any proposed new point source atmospheric discharge points.
- A map of the location of all point sources of atmospheric emissions.
- A description of potential sources of fugitive emissions (including odour and dust that may arise from loading, unloading and transport).

³ 'noise sensitive premise' is defined as: residences and residential zones (whether occupied or not), schools, hospitals, caravan parks and similar land uses involving the presence of individual people for extended periods, except in the course of their employment or for recreation.

Legislative and policy requirements

Consideration should be given to the requirements of the Tasmanian *Environment Protection Policy (Air Quality)* (see <http://epa.tas.gov.au/policy-site/Pages/Air-Quality-EPP.aspx>).

6.7 Surface Water Quality

Discuss potential impacts of the proposal on surface water, including:

- Identifying any proposed new point source liquid emissions (wastewater and stormwater).
Note: wastewater means water used or contaminated during carrying out the activity and does not include clean stormwater arising from rainfall on the proposal site.
- Details of stormwater management (including during reasonably foreseeable flood events). The potential for pollutants to become entrained in stormwater should be assessed.
- A map of the location of stormwater collection systems and details of drainage control measures such as cut-off drains and sediment settling ponds.
- If the proposal anticipates a discharge to a municipal sewerage system (including tankered waste) then a suitably detailed agreement with the operator of the municipal sewerage system should be negotiated.
- Details of management practices for areas disturbed during construction to prevent sediment movement into watercourses. This should include contingencies for failure of control measures, such as during heavy rainfall or flooding.

Legislative and policy requirements

It must be demonstrated that the proposal is consistent with the objectives and requirements of relevant water management policies and legislation including the *Water Management Act 1999*, the *State Policy on Water Quality Management 1997*, and the *Tasmanian State Coastal Policy 1996*.

In particular, it must be demonstrated that the proposal will not prejudice the achievement of any water quality objectives set for water bodies under the *State Policy on Water Quality Management 1997* (see <http://epa.tas.gov.au/policy-site/Pages/Water-Quality-Policy.aspx>). Where water quality objectives have not yet been set, EPA Tasmania should be consulted to identify the baseline water quality data required to enable the water quality objectives to be determined.

6.8 Groundwater

Discuss potential impacts of the proposal on groundwater (quality and quantity), including:

- A map showing the location of any groundwater bores.
- A conceptual groundwater model for regional and local aquifer flows.

Information on groundwater in Tasmania is available at: <http://wrt.tas.gov.au/groundwater-info>

Legislative and policy requirements

It must be demonstrated that the proposal is consistent with the objectives and requirements of all relevant water management policies and legislation, including the *Water Management Act 1999* and the *State Policy on Water Quality Management 1997*.

6.9 Waste Management

Discuss the impacts of waste generated by the proposal, including:

- Identify the source, nature and quantities of all wastes, (liquid, atmospheric or solid) including general refuse and by-products from the various stages of the process likely to be generated.

- Methods and facilities proposed to collect, store, reuse, treat or dispose of each waste stream should be identified. Maintenance requirements should be included.
- The source, nature, quantity, and method of treatment, storage and disposal for each controlled waste should be described. Note: controlled waste is defined in the EMPC Act and associated regulations. A non-exhaustive listing of categories of controlled waste can be found on the internet at <http://epa.tas.gov.au/regulation/waste-management/controlled-waste>.

Legislative and policy requirements

Waste management measures must be in accordance with the following hierarchy of waste management, arranged in decreasing order of desirability:

- avoidance
- recycling/reclamation
- re-use
- treatment to reduce potentially adverse impacts
- disposal.

6.10 Dangerous goods and environmentally hazardous materials

Discuss impacts of the proposal in relation to dangerous goods and environmentally hazardous materials (any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment and includes fuels, oils, waste and chemicals), including:

- The nature, quantity and storage location of all environmentally hazardous materials including Dangerous Goods (as defined in the *Australian Code for the Transport of Dangerous Goods by Road and Rail*) that will be used during the construction and operation of the proposal.
- A map showing the location of temporary and permanent storage areas for fuels, oils, and other dangerous goods or chemicals.
- The measures (such as bunded areas or spill trays) to be adopted to prevent or control any accidental releases of dangerous goods and environmentally hazardous materials.
- Contingency plans for when control measures, equipment breakdowns or accidental releases to the environment occur, including proposed emergency and clean-up measures and notification procedures.
- Identify any safety management requirements for the protection of human health and safety affecting the community.

6.11 Natural Values

General Information

Discuss impacts of the proposal on nature conservation values (terrestrial and aquatic) including:

- The potential for construction activities to impact waterways and aquatic fauna should be included in the EIS, together with proposed management measures.
- Identify any freshwater ecosystems of high conservation management priority using the Conservation of Freshwater Ecosystem Values (CFEV) database (accessible on the internet under <https://wrt.tas.gov.au/cfev>). The scope of investigation should encompass the vicinity of the proposed development where there is likelihood of alteration to the existing environment. The specific CFEV information used for EISs should be Conservation Management Priority Potential which is appropriate for development proposals.

- Impacts on sites of geoconservation significance or natural processes (such as fluvial or coastal features), including sites of geoconservation significance listed on the Tasmanian Geoconservation Database. See below.
- Impacts on existing conservation reserves sites or areas of special conservation significance, including areas of wilderness, scientific, or geodiversity value which may be affected by the proposal, with reference to the management objectives of the reserve(s) and the reserve management plan(s) (if any).
- Impacts on any high quality wilderness areas identified in the *Tasmanian Regional Forest Agreement* (Tasmanian RFA) which may be affected by the proposal.
- Where impacts cannot be avoided, proposed measures to mitigate and/or compensate adverse impacts on biodiversity and nature conservation values should be presented.

Sites of Geoconservation significance

Two geoconservation sites lie within, or partly within, the proposed development site boundaries:

- Western Tasmanian Blanket Bogs (ID 2527) - some smaller patches occur within project area boundaries
- Medway River Mound Spring (ID 3335) - a very small geosite entirely within project area boundaries.

The Western Tasmanian Blanket Bogs are the most extensive organosol terrain in the Southern Hemisphere. Only small, isolated patches lie within the project area, where the main concern would be to not substantively disrupt drainage within the organic soil. Drainage disturbance is perhaps most likely to occur where organosols are stripped and replaced with imported road base material. Under such circumstances the size and spacing of culverts, feeder drains and outfall areas will need to be carefully considered. Information on how impacts to this feature will be avoided and mitigated should be outlined in the EIS.

Medway River mound spring is a very small site, approx. 1000 m³ in area, adjacent to Wattle Park Road. It is sensitive to ground disturbance at even the smallest scale, e.g. pedestrian trampling, and should be completely avoided if practicable. As an active travertine landform the site is also sensitive to dust, which may be incorporated within the carbonate deposit. Therefore, active dust suppression in the vicinity of this site is considered essential. These measures should be included in the EIS.

Conservation Covenants

The project site includes areas of Restrictive Conservation Covenant C934223, registered on land title under the *Nature Conservation Act 2002*. The project may require authorisations, approvals or compliance actions pertinent to the terms and conditions of the covenant.

6.12 Greenhouse gases

Discuss impacts of the proposal in terms of the evolving national response to climate change and greenhouse gas emissions and the targets set in the *Climate Change Action Plan 2017 – 2021*. Proponents will need to determine whether they are required to report to the Commonwealth under the *National Greenhouse and Energy Reporting Act 2007*.

6.13 Socio-economic issues

Discuss the social and economic impacts of the proposal. Details may include the following:

- An estimate of total capital investment for the proposal and where that capital will be expended (particularly in relation to the source of large capital items of processing equipment).

- Operational expenditures and revenues.
- The impacts on local and State labour markets for both the construction and operational phases of the proposal. The number and nature of direct and indirect jobs arising from the proposal must be detailed. Skills and training opportunities should also be discussed.
- The impacts on upstream/downstream industries, both locally and for the State.
- The extent to which raw materials, equipment, goods and services will be sourced locally.
- A qualitative assessment of impacts on local social amenity and community infrastructure, including recreational, cultural, health and sporting facilities and services. Any proposals to enhance or provide additional community services or facilities should be described.
- Community demographic impacts (changes to cultural background, occupation, incomes).
- Impacts on land values, and demand for land and housing.
- Impacts on the local, regional, state and national economies.
- Any publicly funded subsidies or services to be relied upon for the construction or operation of the proposal.
- Any impacts on Local, State and Federal Government rate, taxation and royalty revenues.

The extent to which socio-economic considerations need to be described depends on the nature and extent of any negative impacts or risks to the environment from the proposal.

Modest proposals with relatively low level and localised environmental impacts or risks may only need details of intended capital expenditure, operational expenditures, revenues and employment (distinguishing between direct and indirect employment) and a qualitative discussion of other socio-economic aspects of particular relevance.

Proposals with higher level or broader scale environmental impacts will need a more comprehensive analysis of economic and social benefits to allow the Board to assess the benefits and adverse impacts of the proposal. This may include an explanation of the methods used to model impacts and describe the manner and results of engagement with the local community to determine their needs and aspirations in relation to the proposal.

6.14 Fire risk

Discuss the potential fire risk associated with the proposal, including:

- Consideration of fire within the site, fire escaping from the site and the impact of wildfire originating outside the development and the environmental impacts that could result from such an event.
- The objectives and management principles to be adopted to prevent and respond to potential fire events.
- Where a fire response plan is appropriate, it should be fully integrated with other relevant documents, such as a Tasmania Fire Service Local Area Fire Management Plan, a Forestry Tasmania Fire Management Plan and a Parks and Wildlife Service Fire Action Plan for relevant districts.

6.15 Infrastructure and off-site ancillary facilities

Discuss potential environmental impacts of the proposal on any significant off-site or infrastructure facilities (including increased use of existing infrastructure, such as roads, transmission lines, ports and quarries), identify measures to avoid and mitigate any possible adverse impacts and assess the overall impacts following implementation of the proposed avoidance and mitigation measures.

Identify roads and other infrastructure to be used by vehicles for the proposal (during both construction and operation). Potential environmental impacts associated with construction and use of such infrastructure should be assessed.

6.16 Cumulative and interactive impacts

This section should contain an assessment of the potential cumulative impacts of the proposal in the context of existing and approved developments in the region, if such impacts have not been addressed in previous sections.

Evaluation of the cumulative impact from wind farms on threatened eagle species should be included, particularly in relation to wind farms in close proximity to the proposed site.

Other proposals which have been formally proposed, and for which there is sufficient information available to the proponent to allow a meaningful assessment of their impacts, should also be considered in that assessment. Uncertainties about potential impacts in such cases should be identified.

Interactions between biophysical, socio-economic and cultural impacts of the proposal should be discussed.

6.17 Environmental Impacts of Traffic

This section should identify the traffic routes for the proposal (both during construction and operation) and the likely volume and nature of traffic and timing of traffic flows, including details of the current usage of these roads. Environmental impacts associated with current and altered traffic flows and usage should be discussed (such as roadkill, noise and dust impacts on other roads users and residences adjacent to roads). The assessment should focus on roads within the land defined by the proposal but also indirect impacts on public roads.

7. Monitoring and Review

This section should provide an outline of any monitoring, review and reporting programs for the proposal. The program should be designed to meet the following objectives:

- Monitoring of compliance with emission standards and other performance requirements identified in the EIS.
- Assessing the effectiveness of the performance requirements and environmental safeguards in achieving environmental quality objectives.
- Assessing the extent to which the predictions of environmental impacts in the EIS have eventuated.
- Assessing compliance with management measures defined in the EIS.

A map showing the location of all monitoring sites and a table of proposed monitoring including location, parameters and frequency should be included.

8. Decommissioning and Rehabilitation

The EIS should describe an on-going, staged approach to site decommissioning and rehabilitation throughout the proposal life.

A preliminary Decommissioning and Rehabilitation Plan or Closure Plan should be outlined.

9. Management Measures

This section should contain a consolidated management measures table listing all of the management measures made throughout the EIS. Measures must be sequentially numbered,

unambiguous statements of intent. For each measure, the table must specify when it is to be implemented and refer to the section of the EIS where the measure is detailed.

10. Conclusion

The EIS must provide an overall conclusion as to the environmental acceptability of the proposal, including discussion on compliance with the principles of Ecologically Sustainable Development (ESD) and the objects and requirements of the EPBC Act. Reasons justifying undertaking the proposal in the manner proposed should also be outlined.

Measures proposed or required by way of offset for any unavoidable impacts on MNES and the relative degree of compensation, should be restated here.

11. References

This section should provide details of authorities consulted, reference documents etc. References should state how the reliability of the information was tested and what uncertainties (if any) are in the information.

12. Appendices

As a means of improving readability of the EIS document, detailed technical information which supports the EIS should be included in appendices. The salient features of the appendices should be included in the main body of the EIS. Care should be taken to avoid inconsistencies between technical content of Appendices and the EIS itself, unless carefully explained.

13. Glossary

EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMPC	<i>Environmental Management and Pollution Control Act 1994</i>
EMPCS	Environmental Management and Pollution Control System objectives to be found in Schedule 1 of EMPCA
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i> JAMBA/CAMBA - Japan-Australia and China-Australia Migratory Bird Agreements
MNES	Matters of National Environmental Significance
RMPS	Resource Management and Planning System of Tasmania objectives to be found in Schedule 1 of EMPCA
Tasmanian RFA	Tasmanian Regional Forest Agreement

Appendix A: Other issues and agency contacts

In addition to a permit under the LUPA Act and the EMPC Act, there may be other legal requirements to allow your proposal to proceed. These may include other permits, licences or landowner consent. You may also need to contact other Government agencies to obtain information for the purpose of assessment under the LUPA Act or the EMPC Act. The following list identifies some of the key agencies you may need to contact:

Note: your proposal may be referred to other agencies in the process of preparing guidelines. Should assessments or approval outside of the Board's responsibilities be required, the respective agency will engage with you to progress them.

Natural values including flora, fauna, and geoconservation values, or permits to deal with threatened species:

Conservation and Assessments Section

Telephone: (03) 6165 4395

Email: conservationassessments@dpipwe.tas.gov.au

Website: www.dpipwe.tas.gov.au

Historic cultural heritage, including State-level site listings, impacts and permits as required under the Historic Cultural Heritage Act 1995:

Heritage Tasmania

Telephone: (03) 6165 3700

Email: enquiries@heritage.tas.gov.au

Website: www.heritage.tas.gov.au

Note: Where works are proposed in or in close proximity to a heritage place entered on the Tasmanian Heritage Register or likely to be of heritage significance to the whole of Tasmania, and a permit is required under the *Land Use Planning and Approvals Act 1993*, the proposal will be referred to Heritage Tasmania by the planning authority. There may also be additional sites listed under local planning schemes, impacts on which are assessed by the relevant planning authority.

Aboriginal heritage, including desktop assessment, artefact survey requirements, permits:

Aboriginal Heritage Tasmania

Telephone: (03) 6165 3152

Email: aboriginal@heritage.tas.gov.au

Website: <http://www.aboriginalheritage.tas.gov.au>

Note: your proposal will be referred to Aboriginal Heritage Tasmania (AHT) on submission or referral to the Board. If Aboriginal Heritage matters are identified, AHT will engage directly with the proponent regarding relevant assessments and approvals.

Parks and reserves, including where any proposal may impact on land managed by Parks & Wildlife:

Parks and Wildlife Service

Telephone: 1300 827 727

Website: www.parks.tas.gov.au and www.thelist.tas.gov.au

Crown land, including where any proposal may impact on land owned by the Crown:

Crown Land Services

Telephone: (03) 6233 6413

Email: cls.enquiries@dpipwe.tas.gov.au

Website: www.parks.tas.gov.au

State roads, including where any proposal requires works on or access from a State-managed road asset:

State Roads

Telephone: (03) 6166 3369

Email: permits@stategrowth.tas.gov.au

Website: www.transport.tas.gov.au

Appendix B: Avian mortality monitoring plan guidelines

1. Introduction, include
 - Brief project description and site location
 - Site layout plan
 - The proponent, including the person responsible (as defined in Schedule 1: Definitions)
 - Permit conditions fulfilled by the plan (ie EPA and/or Commonwealth).
2. Objectives of the plan
3. Survey methodology, a structured and statistically designed survey program
 - 3.1 Assuming searches by human observers or dogs.
 - The search methodology, to be informed by the results of scavenging and detectability trials should include:
 - The turbine area to be searched (ie distance from the base of turbine)
 - Spacing of circular transects (ie at what distance from the turbine base will each transect occur)
 - The number and location of turbines to be searched
 - The frequency of searches (including frequency of each individual turbine)
 - The search strategy (will the same search strategy be suitable for all turbines, based on terrain and surrounding vegetation)
 - How searches are undertaken, ie car/foot/dog/ATV, and how many observers.
 - Management of searched areas, ie will vegetation require slashing to allow detections
 - Commencement date of surveys
 - Survey duration
 - Inclusion of met masts search methodology, if present
 - Estimation of the proportion of mortalities and injured birds and bats likely to be detected, based on the results of the observer detectability and scavenger trials
 - Fatigue management plan
 - Who will conduct the searches (i.e. if informal searches will form part of the monitoring program how will the personnel be trained).
 - 3.2 If the monitoring program is supplemented by an alternative monitoring method such as an automated option (e.g. remote sensing, radar or imaging) full details of the monitoring strategy should be provided, including
 - Commencement date of surveys
 - Comparative benefit of the method relative to using human observers or dogs
 - Survey duration.
4. Incidental dead or injured bird and bat reporting, including actions taken
5. Reporting Requirements
 - Detail the notification requirements to the Director of any evidence of dead or injured native birds or bats (verbal and written).
 - Provide a commitment to provide all results of the monitoring in an annual environmental report to the director.
 - Reports of any dead or injured threatened species should be reported to Threatened Species Section.
6. Review of the mortality monitoring plan and adaptive management.



ENVIRONMENT PROTECTION AUTHORITY