Environmental Impact Statement Guidelines

Bashan Wind Farm Pty Ltd
Bashan Wind Farm, Central Highlands

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ENVIRONMENT PROTECTION AUTHORITY

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Glossary and abbreviations

Term	Definition
Board	Board of the Environment Protection Authority
Case for assessment	Information required for environmental impact assessment, prepared according to the Board's requirements.
CRM	Collision Risk Model
Director	Means the Director, Environment Protection Authority holding office under Section 18 of *Environmental Management and Pollution Control Act 1994* and includes a delegate or person authorised in writing by the Director to exercise a power or function on the Director's behalf.
EIS	Environmental Impact Statement
EMPCA	*Environmental Management and Pollution Control Act 1994*
EMPCS	Environmental Management and Pollution Control System. Objectives found in Schedule 1 of EMPCA.
Environmentally hazardous material	Means 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 but excludes sewage.
EPA	Environment Protection Authority. Tasmania's independent principal environmental regulator which administers EMPCA and consists of a Board and a Director.
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
JAMBA/CAMBA	Japan-Australia and China-Australia Migratory Bird Agreements
LUPAA	*Land Use Planning and Approvals Act 1993*
MNES	Matters of National Environmental Significance
NCA	*Nature Conservation Act 2002*
NRE Tas	Department of Natural Resources and Environment Tasmania
Noise sensitive premises	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.
Planning Authority	Council for relevant local government area
RMPS	Resource Management and Planning System, Tasmania. Objectives found in Schedule 1 of EMPCA.
Suitably qualified person	Means suitably qualified person in the opinion of the Director

Term	Definition
RFA	*Tasmanian Regional Forest Agreement*
TEC	Threatened Ecological Communities
TMO	Tasmanian Masked Owl
TNVC	Threatened Native Vegetation Communities
TSPA	*Threatened Species Protection Act 1995*
WBSE	White-bellied sea eagle
WTE	Wedge-tailed eagle
WTG	Wind turbine generator

Part A. Introduction

These Guidelines provide instructions for proponents on how to prepare an Environmental Impact Statement (EIS) for an activity being assessed in Tasmania by the Board of the Environment Protection Authority (the Board). The Board uses an EIS as a 'case for assessment', to assess the environmental impact of an activity, as required under the *Environmental Management and Pollution Control Act 1994* (EMPCA).

The role of the EIS

An EIS is generally required for larger scale developments, classed as requiring 2B or 2C assessments under EMPCA. It is a document that provides information about a proposal, its potential impacts and proposed mitigation measures. As a publicly available document, an EIS should facilitate public consultation and informed comment and should contain sufficient information to establish the conditions of approval by authorities, if approved.

The EIS should demonstrate that the proposal is consistent with the objectives of relevant laws and policies, including the Tasmanian Resource Management and Planning System (RMPS) and the Environmental Management and Pollution Control System (EMPCS). These systems are designed to facilitate sustainable development.

Further information on the EPA Assessment Process is available on the EPA website.[1]

Refer also to Appendix A *General principles for assessing environmental impacts*, for further information on EIS principles.

How the Board uses the EIS

The Board uses the EIS to inform decision making as part of the environmental impact assessment process. The EIS must be prepared in accordance with guidance provided by the Board under section 74(4) of EMPCA and having regard to the advice provided by Public Health Services, Department of Health Tasmania in accordance with section 74(5) of EMPCA. The staff of the EPA support the Board during the assessment process.

The EIS will be advertised publicly to allow for public consultation. The proponent may then be required to supply additional information in response to public and government agency submissions. This information is generally supplied in the form of a supplement to the EIS.

The Board considers the EIS as well as other relevant information in the context of the objectives of the RMPS and EMPCS. These objectives aim to sustain the environment and avoid or mitigate adverse effects, while considering the economic and social needs of people now and in the future. The Board will endeavour to make the decision which best furthers the objectives of the RMPS and EMPCS. It may approve the proposal with conditions, or in some cases may decide to reject the proposal if the objectives cannot be upheld.

The Environmental Impact Statement Guidelines are adapted for each specific proposal. In general, more detailed studies and information will be required where issues are considered by the Board to involve a higher level of environmental risk.

Other significant matters may emerge while preparing the EIS, from environmental studies, public comments, or other sources. These must also be considered in the EIS. Information collected or generated during the assessment process may also change the understanding of the level of risk associated with some issues. This must also be reflected in the EIS.

[1] See https://epa.tas.gov.au/Pages/Assessment-Process.aspx

Planning information

The relevant Planning Authority (local Council) will assess planning information if the *Land Use Planning and Approvals Act 1993* (LUPAA) applies. Information solely for the purpose of assessment under the relevant Planning Scheme should be supplied to the Planning Authority either:

- as required under section 54 of LUPAA where the planning application has started the environmental assessment process; or
- as a combined planning and environmental report where it is intended to submit an EIS (draft or final) with the planning application. Where this option is selected, the information required for the Board's assessment must be clearly distinguished from that supplied for the purposes of LUPAA.

Australian Government environmental assessment

The proposal was determined to be a controlled action on 27 February 2025 under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (EPBC Reference 2024/10055) 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 & 18A of the EPBC Act); and
- Listed migratory species (sections 20 & 20A of the EPBC Act).

The Australian and Tasmanian Governments have signed a bilateral agreement for environmental impact assessment under section 45 of the EPBC Act, which accredits the Tasmanian assessment process. This allows a proposal that has been determined to be a controlled action under the EPBC Act to be assessed by the Board on behalf of the Australian Government.

If a proponent elects to have their proposal assessed under the bilateral agreement, the EIS should specifically describe the implications of the proposal for the relevant EPBC Act controlling provisions. It must also contain a summary table showing that it addresses the matters specified in Schedule 4 of the *Commonwealth Environment Protection and Biodiversity Conservation Regulations 2000*.[2]

[2] See http://www8.austlii.edu.au/cgi-bin/viewdoc/au/legis/cth/consol_reg/epabcr2000697/sch4.html

Part B. Instructions

The EIS must present information in a way that can be easily understood. It should provide summaries in non-technical language to give readers a general understanding of the proposal. It must also provide technical detail to allow analysis and understanding of impacts and mitigation measures by technical specialists, regulatory bodies, and people with an interest in specific matters arising from the proposal.

Section C of these Guidelines sets out the structure and **minimum** content requirements of the EIS.

Proponents are advised to consult the EPA during preparation of the EIS, including in the case of any uncertainty in relation to the requirements set out in these Guidelines.

General requirements

- Avoid technical terminology where possible in the main body of the EIS. It should be able to be read as an independent document which provides a general understanding of the proposal.
- Include any detailed technical data or supplementary reports as appendices.
- Consider document accessibility. The Australian Government Style Manual provides information about inclusion and accessibility.
- Use cross-referencing to prevent unnecessary duplication between sections.
- Reference all sources of information using a consistent style.
- Define all key terms and words used.
- Information in the EIS must be relevant.
    - Show reasoning for arguments. Support conclusions with referenced evidence.
    - Indicate how current information is, how reliability has been tested, and the degree of confidence attached to any predictions.
    - Sufficient technical detail must be provided to allow for environmental impact assessment, even when details are not final at the time of preparation.
    - If information is currently unavailable, estimates and alternative options should be provided, however the limitations of available information must be evaluated.
- Provide any sensitive commercial or corporate information in a confidential appendix. Provide a comment in the EIS if this has been done.

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 (section 43A of EMPCA).

Spatial and visual information requirements

- Present information in maps, plans, diagrams, and photographs where necessary, to enhance understanding.
- Images must be high quality and reproducible in monochrome, with all text and relevant features clearly visible.
- Maps and plans should include a north arrow and scale.

- Use a consistent base plan throughout the EIS where appropriate, to allow elements to be overlaid and compared. Ensure that detailed information is clear and visible, particularly when using satellite images as background layers. This is best achieved using a geographical information system (GIS).
- Specify the coordinate reference system when providing or referring to spatial information, including maps, plans, grid coordinates and heights. Further information on coordinate reference systems used in Tasmania can be found on the Land Tasmania website[3].

  Recommended systems are:

  - Horizontal – Geocentric Datum of Australia 1994[4] Map Grid of Australia Zone 55 (GDA94 MGA55)
  - Vertical – Australian Height Datum (Tasmania) (AHD83).

Independent Review

The draft EIS should be independently reviewed by a suitably qualified person to confirm that it meets the requirements detailed in Guidelines issued for the proposal.

Submission

It is strongly recommended that proponents submit a draft EIS to the EPA for review prior to formal lodgement of the EIS with the Board. The draft EIS submitted for review must meet the requirements of these Guidelines and be in accordance with Appendix A; incomplete documents will not be accepted for review.

The EIS (and any drafts submitted for review) may be submitted via email to assessments@epa.tas.gov.au and your nominated contact officer. Proponents should contact the EPA if alternative submission methods are deemed necessary.

[3] See https://nre.tas.gov.au/land-tasmania/geospatial-infrastructure-surveying/geodetic-survey/coordinate-height-and-tide-datums-tasmania

[4] Geocentric Datum of Australia 2020 (GDA2020) is the new official datum for recording the horizontal location of spatial information in Australia, but is not yet fully implemented in Tasmania.

Part C. EIS structure and content

The EIS must follow the structure set out below and must address all requirements unless otherwise agreed following consultation with the EPA. For clarity, organise content with further headings and subheadings as appropriate.

Title page

The title page must include:

- Name of proponent (legal entity)
- Name of proposal (include "expansion" or "upgrade" where appropriate)
- Proposal address or location
- EIS version number
- Month and year of submission

Executive summary

The executive summary must provide a clear and concise overview of the proposal, its environmental implications, and the function of the EIS in the context of the assessment process. For a larger EIS, the executive summary must be written as a stand-alone document for people who may not wish to read or acquire the full EIS.

Table of contents

The EIS must include a table of contents and a list of figures and tables to allow the reader to easily locate information. The table of contents should include hyperlinks to allow documents to be navigated easily.

Glossary and abbreviations

Provide a list of abbreviations and acronyms and a glossary which clearly defines any technical terms used in the EIS.

Proponent information

Proponent details:

- Name of proponent (legal entity)
- Name of proponent (trading name)
- Registered address of proponent
- Postal address of proponent
- ABN
- ACN (where relevant)

Contact person's details:

- Name
- Telephone
- Email address

Activity Operator details must be provided if the operator will be a different entity to the proponent.

1. Introduction

The introduction should provide:

- General background information on the proponent, including relevant development and operational experience.
- General background information on the proposal, including:
    - current status of the proposal;
    - an overview of the principal components of the proposal;
    - the proposal location;
    - likely markets for the product;
    - possibilities for future expansion; and
    - objective of the proposal.
- If the proposal is associated with an existing activity, information on current permits, regulatory approvals and/or licences.
- A discussion about how the proposal relates to any other proposals that have been or are being developed in the same region as the proposal.
- Environmental legislation, standards and guidelines that will be applicable, such as policies, regulations, and industry codes of practice.
- Other relevant Commonwealth[5], State and Local Government policies, strategies, and management plans with which the proposal would be expected to comply.

2. Proposal description

The scope of the proposal must be clearly described, and must include:

- A summary table,
- A detailed description of proposal,
- Definition of the Land,
- Maps, plans and visual information,
- A summary of planning aspects,
- Socio-economic context, and
- Off-site infrastructure.

Where a proposal will require a permit application under LUPAA, the proposal description and specification of the site must be consistent with the intended or current permit application.

[5] Relevant Commonwealth policy documents include:
Commonwealth of Australia, 2013, EPBC Act Policy Statement 1.1 Significant Impact Guidelines - Matters of National Environmental Significance
Commonwealth of Australia, 2010, Survey Guidelines for Australia's Threatened Birds
Commonwealth of Australia, 2009, EPBC Act Policy Statement 2.3 Wind Farm Industry
Commonwealth of Australia, 2010, Survey Guidelines for Australia's Threatened Mammals
Note that this is not an exhaustive list, others may apply (including Recovery Plans).

2.1 Summary table

The summary table provides an overview of the proposal and identifies the key characteristics, including:

- Location and planning context;
- Existing site information, including topography, local climate, geology, geomorphology, soils (e.g. erodibility and acid sulphate soils), vegetation, fauna, groundwater, and surface drainage (e.g. waterways, lakes, wetlands, coastal areas);
- Proposed infrastructure;
- Proposed timeline; and
- Inputs (e.g. water, materials, energy) and outputs (e.g. products, wastes and emissions).

Refer to *Appendix C* for an example of a project description summary table.

2.2 Detailed description of proposal

This section should include information that has not been included in the summary table, or that requires further explanation. Provide detail on the proposed construction, commissioning and operation of the activity, including any ancillary works that are for the purpose of the proposal (e.g. access works).

2.2.1 Project Components

- Describe the physical components required for the proposal to function up to closure.
- Describe the major items of equipment (including pollution control equipment) and onsite facilities. Include detailed technical information on major items of equipment as appendices.
- Detail the total footprint of the proposal.

2.2.2 Construction

- Provide a step-by-step description of significant activities that will occur during the construction phase of the proposal.
- Provide an indicative timetable and map associated with completing major stages of construction.
- Detail the total construction footprint including any temporary infrastructure required during the construction phase.
- Define the proposed hours within which construction activities will take place (hours per day and specific days per week).
- Describe the volume, composition, origin, destination, and route for vehicle movements (road, rail, shipping, and air) during construction. Specify what proportion of road usage and vehicle movements will involve over-dimension and heavy road vehicles. Compare the proposed vehicle movements with existing usage of relevant routes.

2.2.3 Commissioning

- Provide a step-by-step description of significant commissioning activities that will occur following installation of equipment.
- Provide an indicative timetable for completing major stages of commissioning. Describe the point at which commissioning will be considered complete.

2.2.4 Operation

- Describe the process(es) of operation in a step-by-step manner, using explanatory diagrams and flow charts where appropriate.
- Outline all raw materials (including water) required for operation. Detail sources, quantities, and characteristics.
- Identify and quantify all products, emissions and/or wastes produced.

- Outline all energy requirements for operation. Describe how energy demands will be met.
- Define the production capacity and rate for relevant processes. Include peak rates, daily average rates and annual production rates where applicable.
- Define the proposed hours of operation (hours per day and specific days per week). Specify any seasonal variations.
- Describe the volume, composition, origin, destination, and route for vehicle movements (road, rail, shipping, and air) likely to occur during operation, including timing of traffic flows. Specify what proportion of road usage and vehicle movements will involve over-dimension and heavy road vehicles. Compare the proposed vehicle movements with existing usage of relevant routes.

2.3 Maps, plans and figures

Provide maps and plans that detail the location of the proposal in relation to the local and wider region. Refer to Part B for spatial and visual information requirements.

2.3.1 General location maps

Provide general location maps of the existing environment and surrounding area (1:25,000 scale or better, as appropriate) which identify:

- The location of the proposal site;
- Boundaries of the property on which the proposal is located;
- Road access to and from the site;
- The distance(s) to any nearby sensitive uses[6];
- The applicable attenuation distance;[7]
- Topographical features, aspect, and direction of drainage;
- Location of waterways and drains (including ephemeral waterbodies and water courses);
- Electricity transmission lines;
- Surrounding land tenure;
- Surrounding land use (including areas of conservation or recreational significance); and
- Surrounding land zoning in the local government planning scheme.

2.3.2 Map of the Land

Provide a map of the Land as defined in the Development Application showing relevant Cadastral boundaries with title details, e.g. Volume/Folio 136529/1.

2.3.3 Map of the proposed activity area

Provide a map of the proposed activity area clearly showing the physical extent of the proposal. The activity area should encompass all works for construction and areas used for operation, including earthworks, land clearing, existing or proposed structures, stockpiles, laydown areas, parking, amenities and sediment management and other infrastructure.

- The map should include a sufficient number of coordinates at corner points for the activity area boundary; and
- The activity area boundary should also be provided in a geospatial vector format (shapefile or DXF).

Where works are proposed in key stages over time, include definitions or boundaries of each of the key stages.

Any areas that are being assessed separately but within the project area, such as the proposed Bashan Quarry, need to be clearly identified.

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[6] 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.'

[7] Refer to relevant planning scheme or the State Planning Provisions.

2.3.4 Site Plan

Provide site plan(s) showing the detail of the proposed works and operation, including:

- cadastral boundaries and mining lease boundaries (if relevant)
- the boundary of the activity area
- construction and operational site plans
- the location of existing and proposed buildings/structures and plant and machinery
- the location of existing and proposed roads and tracks
- relevant topographic features, including contours and waterways
- proposed temporary and permanent buildings, structures, major earthworks, major items of equipment, storage areas, loading/unloading areas
- the locations and extent of areas that may be used for any extraction or materials handling that are included as part of the proposal (e.g. on-site quarries to extract material for construction of roads and hardstands)
- site water management (drains, settling ponds, bunding and monitoring points, as relevant)
- vegetation types, clearly marking areas to be cleared, and records of any threatened species/vegetation communities.

2.3.5 Figures and flowcharts

Present figures such as process flowcharts and images where they are likely to improve readers' understanding of the site and proposal. Any images and photos used must be high-quality, with an accurate description and date.

2.4 Offsite infrastructure

Describe any new infrastructure or offsite ancillary facilities required to enable the proposal to proceed, such as water supply, electricity supply, roads or other infrastructure.

3. Planning and socio-economic context

The planning aspects description should include any additional planning information and data not included in the summary table.

- If a permit is required under LUPAA provide Use Class and Permissibility of the proposed activity under the applicable Planning Scheme.
- Detail land tenure and property boundaries of the proposed site, with certificate of title details.
- Detail land zonings for the proposed site and surrounding areas.
- Describe any rights of way, easements and covenants affecting the site.
- Discuss land use and planning history of the site, including the potential for site contamination[8], present use and any existing buildings and significant structures.
- Describe land use and ownership in the vicinity of the site and those areas which may be affected by the proposal.
- Provide the location and nature of industrial facilities.
- Detail sensitive uses[9] and residential zones within applicable attenuation distances including the location of individual residences, schools, hospitals, caravan parks and similar sensitive uses, and the location of

[8] Information on potentially contaminating activities and contaminated site assessment can be found online at https://epa.tas.gov.au/Pages/Land.aspx

[9] 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.'

any tourist or recreation facilities or routes (such as camping areas, picnic areas, walking tracks, historic routes).

- Consider any proposed or potentially sensitive uses within applicable attenuation distances from the proposal site, which have been or are likely to be granted approval under the local planning scheme.
- Briefly describe the existing social and economic environment that may be affected by the proposal. This may include:
    - 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.

4. Project Alternatives

Proponents should provide the rationale for the proposal. Alternatives should consider best practice environmental management, including measures listed under section 4(2) of EMPCA.[10] The rationale should:

- Describe the site selection process and criteria.
- Evaluate any alternative sites considered. Justify the choice of the proposed site in terms of clearly defined environmental, social, economic, and technical considerations, including avoidance of environmental impacts.
- Describe the effect of any community consultation on the selection process.
- Identify and provide an assessment of other available technologies, materials, design options or management practices, where relevant, including how environmental impacts will be avoided. Evaluate the environmental performance of identified alternatives and provide justification for the preferred option.

5. Public Consultation

Describe any public consultation that has taken place during project planning and preparation of the EIS and summarise the results of this consultation. Describe any proposed future public consultation that will take place during project implementation and operation. The Board encourages early community engagement, as it often leads to better outcomes for all parties. Guidance on effective community engagement is available on the EPA website. [11]

With specific reference to culturally appropriate engagement, the proponent is encouraged to directly inform Tasmanian Aboriginal community groups about the opportunity to provide input on the EIS when released for public comment. Aboriginal community groups recommended for engagement include:

- Aboriginal Land Council of Tasmania
- Tasmanian Aboriginal Centre
- Six Rivers Aboriginal Corporation

Guidance on culturally appropriate consultation approaches is available under the EPBC Act[12].

[10] See: https://www.legislation.tas.gov.au/view/html/inforce/current/act-1994-044#GS4@EN
[11] See https://epa.tas.gov.au/Documents/Guidance on Community Engagement.pdf
[12] See https://www.dcceew.gov.au/sites/default/files/documents/interim-engaging-with-first-nations-people-and-communities-assessments-and-approvals-under-epbc-act.pdf

6. Potential Impacts and Management

Identify all potential environmental impacts and describe the proposed measures to avoid, mitigate or offset adverse consequences. The detail provided on each issue should reflect its significance. While key issues are identified for the proposal, other issues that emerge as significant while preparing the EIS, through environmental studies, public comments or otherwise, must be considered and addressed.

Address each discrete issue separately, using headings and subheadings where necessary to organise and separate discussions.

Use scientific data to support predictions and evaluate impacts and provide references to the data used. Where specialist reports have been required for key issues, summarise them within the body of the EIS where relevant, and attach the reports as appendices. Detail the qualifications of the authors of any specialist reports. Make sure that the information in the body of the EIS is consistent with the information in the appendices.

General information requirements for each potential impact are described below and are in addition to any specific information requirements detailed later in this section.

Existing Environment

- Describe the existing environment in relation to the impact, including the vulnerability of the potentially affected environment.

Methodology

- Describe how the assessment of the impact has been undertaken, such as by survey or desktop study.
- Identify any relevant guidelines and standards used.
- Discuss any choice of methodology over alternatives where relevant.

Assessment

- Clearly articulate potential impacts, using tables and figures to aid communication where possible.
- Support assertions and assumptions with adequate argument and/or evidence.
- Identify plausible worst-case scenarios and the reversibility of the impact.
- Summarise the proposal's contribution to any cumulative impacts, where appropriate.

Avoidance and Mitigation Measures

- Describe the measures proposed to avoid, mitigate potential adverse impacts.
- Detail any specialist recommendations which have been/will be implemented. Where specialist recommendations are not to be implemented, justify why. All recommendations made in specialist reports should be addressed.
- Analyse the effectiveness of the mitigation measures. Describe how and to what degree the impacts will have been avoided, minimised or offset.
- Discuss any residual impacts, referring to relevant guidelines or standards.
- Discuss any contingency measures related to pollution control equipment.

Refer to *Appendix B: General principles for assessing environmental impacts*.

Key issues

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

1. Potential impacts on avian fauna associated with the operation of the proposal.
2. Potential impacts on non-avian fauna associated with construction and/or operation of the proposal.
3. Potential impacts on flora and vegetation communities associated with construction and/or operation of the proposal.

6.1 Avian Fauna

The EIS should discuss the potential impacts of construction and operation of the proposal and any associated infrastructure on avian fauna, with specific reference to Matters of National Environmental Significance (MNES), threatened and migratory species, including those listed under the Tasmanian *Threatened Species Protection Act 1995* (TSPA), the Tasmanian *Nature Conservation Act 2002* (NCA), and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). When discussing impacts on species please note whether the assessment has been made against Tasmanian or Commonwealth legislation.

With respect to MNES, the EIS should reference the Significant Impact Guidelines 1.1 – Matters of National Environmental Significance. Specifically, the EIS should discuss the significant impact criteria for each species noting the significant impact criteria is different for each matter of national environmental significance, AND each species' listing status (critically endangered, endangered, vulnerable and migratory). Reference should also be made to the Commonwealth's draft *Onshore Wind Farm Guidance - best practice approaches when seeking approval under Australia's national environment law*.

Impacts of the proposal are likely to include mortality or injury of avifauna through collision with wind turbine generators (WTGs), transmission lines and associated infrastructure as well as habitat loss and disturbance.

6.1.1 Required technical studies

- Bird Utilisation Surveys (BUS)
- Targeted surveys for nocturnally active avian fauna (including bats)
- Targeted utilisation surveys – WTE and WBSE
- Nest searches and condition assessments - WTE and WBSE
- Bird and Bat Management Plan (BBMP)
- Collision Risk Model (CRM)

6.1.2 Existing Environment

- Describe and map known records within the proposal site and surrounding areas of avian fauna as relevant with reference to threatened species listed under the TSPA, NCA and EPBC Act. For listed species provide the listing status under both Tasmanian and Commonwealth legislation.
- Provide the results of natural values surveys undertaken by a suitably qualified person(s), in accordance with relevant survey guidelines,[13] for avian fauna species including but not limited to:
    - Tasmanian wedge-tailed eagle (*Aquila audax* subsp. *fleayi*) (WTE) – listed as Endangered under the EPBC Act and the TSPA.
    - white-bellied sea-eagle (*Haliaeetus leucogaster*) (WBSE) – Marine under the EPBC Act and vulnerable under the TSPA. Note the marine listing under the EPBC Act is not triggered for this project.

[13] See https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments

- swift parrot (*Lathamus discolor*) - Critically endangered under the EPBC Act and endangered under the TSPA.
- blue-winged parrot (*Neophema chrysostoma)* - Vulnerable under the EPBC Act and is currently being considered for listing under the TSPA.
- white-throated needletail (*Hirundapus caudacutus)* – Vulnerable and migratory under the EPBC Act.
- Tasmanian azure kingfisher (*Ceyx azureus diemenensis*) – Endangered under the EPBC Act and TSPA
- Tasmanian masked owl (*Tyto novaehollandiae castanops*) (TMO) - Vulnerable under the EPBC Act and endangered under the TSPA
- fork-tailed swift (*Apus pacificus*)– Migratory under the EPBC Act
- satin flycatcher (*Myiagra cyanoleuca*) – Marine under the EPBC Act. Note the marine listing under the EPBC Act is not triggered for this project.
- common sandpiper (*Actitis hypoleucos*) – Migratory under the EPBC Act
- sharp-tailed sandpiper (*Calidris acuminata)* – Vulnerable and migratory under the EPBC Act
- curlew sandpiper (*Calidris ferruginea)* – Critically endangered and migratory under the EPBC Act
- pectoral sandpiper (*Calidris melanotos*)– Migratory under the EPBC Act
- Latham's snipe (*Gallinago hardwickii)* – Vulnerable and migratory under the EPBC Act
- bat spp.

It is noted migratory species may only occur within the area seasonally, and surveys need to coincide with the different activity/migration periods for the species of interest. For migratory species consider Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species.

- Provide information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the proposed action.
- Include information about the identification of threatened and other avian fauna including survey data and historical records. Include survey effort, timing, and an assessment of the adequacy of the surveys.
- Surveys should be done in accordance with the Guidelines for Natural Values Surveys related to Development Proposals and other relevant guidelines. It is requested that all survey data be submitted to the Natural Values Atlas within 90 days of the survey results being finalised.

Bird Utilisation Surveys

Conduct bird utilisation surveys across the proposal site to determine utilisation of the area by avian fauna species. These surveys should be undertaken by suitably qualified persons and multiple observers should be used for each survey. In addition:

- A minimum of five-day surveys should be conducted at the mid-point of each season undertaken from dusk to dawn or an appropriately representative period depending on the time of year. Surveys should be undertaken over a minimum period of two years.
- Surveys should be representative of the full range of avian species using the proposal site across the year, noting that this is particularly important for migratory avian species which will be present, potentially for short periods although for some species longer, from late summer over autumn and during spring. Surveys should also be representative of local wind conditions.
- Post-survey statistical analyses should use appropriate statistical tests and limitations of surveys and the statistical approach should be identified.

Specific Guidance for other Avian Species of Concern

- Specific guidance for swift parrots and blue-winged parrots:
    - The Project area likely contains dry and wet eucalypt forest and woodland which may provide potential foraging resources for the swift parrot. Any tree in this area which is 70 cm diameter at breast height (DBH) or more has the capacity to bear hollows large enough to be suitable nesting habitat for swift parrots. Any nesting habitat within 10 km of foraging habitat may be used for breeding. Birds may also fly through the Project area whilst migrating to other areas of mainland Tasmania. The species may therefore be expected in the area anytime from late July/August to March/April in any year, and most likely early and/or late in the breeding season as they move to and from their breeding areas to the east and south. Surveys are recommended for swift parrots, noting that zero detections do not equate to absence of this species due to their complex movement patterns.
    - The blue-winged parrot is listed as Vulnerable under the EPBC Act and is currently being considered for listing under the TSPA by the Tasmanian Scientific Advisory Committee. The species has previously been recorded within the Project area and mortalities caused by WTGs have been recorded at operational wind farms in Tasmania. Surveys are recommended to determine the birds' use of the Project area (movement, flight height) and adjacent areas for nesting, foraging, and transiting (e.g., as part of migration and/or between foraging and nesting sites).
- Specific guidance for the white-throated needletail:
    - White-throated needletails are migratory species that occur in Tasmania during their non-breeding season, primarily from November to March. The species spends much of its time airborne, from heights of less than 1 m up to more than 1000 m above the ground. White-throated needletail mortalities caused by WTGs have been recorded by operational wind farms in Tasmania and there is also evidence of collisions with powerlines in mainland Australia. Surveys are required to determine their use of the project area (movement, flight height) and adjacent areas for roosting, foraging, and transiting (e.g., as part of migration and/or between roosting sites). The white-throated needletail fly during the daytime and up to two hours prior to sunrise and two hours after sunset, so surveys should be timed to take account of this activity.
- Specific guidance for the Tasmanian azure kingfisher:
    - Surveys are recommended in areas where the development is likely to encroach on preferred habitat i.e., areas where infrastructure such as cables and roads will cross waterways.
- Specific guidance for the Tasmanian masked owl:
    - Masked owls nest exclusively in tree hollows and generally require large trees with a DBH of >100 cm. Tree hollows suitable for masked owl breeding are large (≥ 15 cm diameter at the entrance), deep and generally spacious enough to provide protection for up to four masked owls. Although they can be found in trees with a smaller DBH, trees over 100 cm DBH have a higher probability of containing suitable nesting hollows. Breeding habitat includes forests, woodlands, and pasture mosaics with remnant trees.
    - Roosting sites are often found within 1200 m of a nesting tree. Multiple roosting sites are used within a territory and are often used for one night at a time. Roosting sites can include tree hollows, cliff faces and vegetation, including branches – usually in dense trees or shrubs such as native cherry (*Exocarpos cupressiformis*). As with nesting hollows, an entrance hole of ≥15 cm is required for roosting hollows. However, roosting hollows themselves may be much smaller with room to only accommodate a single owl. Some roosting hollows may evolve into nesting hollows over time. Juvenile masked owls often use more roosting sites than adults.
    - If potential masked owl nesting habitat is identified, it is recommended that either a 150 m buffer be established around suitable nesting trees or further investigations are undertaken to confirm if suitable trees are nest trees. It should be noted that a nest tree could be unoccupied

but still considered an important nest – a masked owl will have several in its territory and will rest one to let it clean.

- Masked owls can be very discreet, and a combination of techniques should be used to minimise the risk of a nest being overlooked. Passive acoustic techniques should be utilised to determine the presence/absence of masked owl in the landscape, using the method below:
    1. Two deployments of acoustic recorders: three weeks for each deployment. The two deployments should be in different seasons (e.g., one in spring, one in summer).
    2. The recording schedule should continue all night long (i.e., not just around sunset and sunrise).
    3. The data analysis (i.e., detection of masked owl calls) should be done either manually by a trained rater or by reliable software.
    4. It is important to consider the detection range of recorders when drawing conclusions about the presence or absence of the species. For example, on steep terrain or in thick vegetation, recorders may need to be positioned closer together.
- If passive acoustic monitoring indicates that masked owls may be present in the landscape please contact the EPA and NRE Tas for further advice.
- It should be noted that a negative result for any of the above survey methods, apart from physical inspection, is not considered conclusive proof of lack of presence (but may indicate likely absence).

- Specific guidance for the Tasmanian wedge-tailed eagle and while-bellied sea eagle is provided below.
- Specific guidance for Latham's snipe can be found at Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species.
- Specific guidance for bat species:
    - Targeted surveys should be undertaken to determine the presence of native bat species at the locations of the proposed turbine locations with the project site.

Targeted utilisation surveys – Tasmanian wedge-tailed eagle and white-bellied sea eagle

Targeted utilisation surveys must be carried out across the proposed project footprint to confirm utilisation of the area by WTE and WBSE. These surveys should be carried out in the manner outlined above for bird utilisation surveys and include:

- Methodology such that spatial use of the site (any favoured areas, any common flight paths etc) can be determined.
- Sufficient coverage to inform a robust understanding of site utilisation and support the application of collision risk modelling.
- Utilisation surveys should be representative of the species range, and prevailing conditions, particularly if wind turbine generators (WTG) are to be located on ridge-tops where updrafts may be extensively used by WTE and WBSE.
- Consideration of incorporating the use of GPS harnessed WTEs (adults) to assess flight patterns. Consultation with relevant specialists/researchers is strongly recommended to design an appropriately informative study/approach, improve air-scape usage information, inform WTG micro-siting and collision risk models.
- Survey data is to be 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.

Nest searches and condition assessments - Tasmanian wedge-tailed eagle and white-bellied sea eagle

Nest searches should be undertaken to understand use of the area by WTE and WBSE. Specifically:

- Searches for WTE and WBSE nests should be undertaken out to 1km from the boundary of the project area, including all areas to be disturbed as a result of the proposal. The results should be used to inform development activities and infrastructure layout.
- Searches for WTE and WBSE nests should be conducted between March and June, that is, outside the breeding season for WTE and WBSE in accordance with the *FPA Fauna Technical Note No. 1 Eagle nest searching, activity checking and nest management* and the *EPA Guide to Eagle Nest Searching and Nest Activity Checks*.
- Previously recorded WTE and WBSE nests that are unable to be located during surveys should follow the reporting process outlined in the *FPA Fauna Technical Note No. 1 Eagle nest searching, activity checking and nest management* and the *EPA Guide to Eagle Nest Searching and Nest Activity Checks*.
- It is recommended that nest searches for WTE and WBSE are undertaken annually until the proposal is fully commissioned.
- Ground-based nest condition assessments may be conducted using UAVs (drones) if they are conducted between April and June and in accordance with the *FPA Fauna Technical Note No. 1 Eagle nest searching, activity checking and nest management*.
- The EIS should:
    - discuss the potential adverse impacts of the proposal on WTE and WBSE nests; and
    - outline how new WTE and WBSE nests will be detected, reported and managed post-commissioning.

6.1.3 Assessment

Describe, assess and analyse the significance of the impacts of the proposal on avian fauna species and habitats, including consideration of:

- Any relevant threatened species Recovery Plans, Listing Statements or Conservation Advice for current information on species foraging habitat requirements, known and potential threats to species recovery, evidence for impact (including from other jurisdictions), and risk ratings, and comprehensive review of current literature for the species.
- Collision risk, including a CRM (detailed below).
- Habitat removal.
- Disturbance from movement, or noise.
- Light pollution impacts on birds and bats, including:
    - Detail proposed lighting infrastructure, lighting regimes, positioning and lighting type during different stages of the proposal.
    - Consider proximity to identified nests and breeding habitat.
    - Have regard to the *National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds (2023)*.
- Cumulative impact with the Cattle Hill Wind Farm, St Patricks Plains Wind Farm, Cellars Hill Wind Farm and any associated developments such as transmission infrastructure. Other proposals for which there is sufficient information available to allow a meaningful assessment of their impacts, should also be considered in that assessment. Further information on cumulative impact assessment can be found at Section 6.17.

Collision-risk model

Provide a CRM and use the results in conjunction with other survey and assessment results/data, such as BUS and targeted surveys, to identify potential impacts from the proposed development to WTE, WBSE, and where sufficient data is available, white-throated needletail (*Hirundapus caudacutus*), blue-winged parrot (*Neophema chrysostoma)*, swift parrot (*Lathamus discolor*) and Latham's snipe (*Gallinago hardwickii*).

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

A proposal outlining how the CRM analysis will be undertaken must be prepared and independently peer reviewed by suitably qualified persons and submitted to the EPA for feedback and approval prior to finalisation of the methodology.

6.1.4 Avoidance and Mitigation Measures

- Describe management measures that will be implemented to avoid adverse impacts to avian fauna (birds and bats), including but not limited to collisions with WTGs, any proposed overhead powerlines and associated infrastructure.
- Where impacts cannot be avoided, present proposed measures to minimise and mitigate adverse impacts on avian fauna. Required management plans and measures (detailed further below) include:
    - Avian collision monitoring program;
    - Carcass management program; and
    - Offset strategy (as relevant)
- Outline how impacts will be avoided and minimised through the design of the proposal and the construction methodology (as relevant), including consideration of the outcomes of the surveys described above.
- If technology-based mitigation or avoidance approaches are proposed (e.g. automated avifauna tracking, WTG curtailment systems such as IdentiFlight, best practice design principles, management measures and mitigation strategies for project-related lighting impacts, etc.), 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. Other mitigation and avoidance strategies such as the use of black blades on WTGs should also be discussed.
- Identify potential residual impacts[14] after full implementation of the avoidance and mitigation steps of the mitigation hierarchy.

Bird and Bat Management Plan (BBMP)

- Provide a BBMP which outlines how collisions (injuries and mortalities) will be detected and reported, and how appropriate management responses will be implemented. The BBMP must include impact thresholds and adaptive management for threatened, migratory and non-threatened native species.
- Refer to avian mortality monitoring plan guidelines in Appendix A for guidance. Additional guidance may also be found in DCCEEW's draft Onshore wind farm guidance
- When assessing impact, discuss how non-detections (i.e., birds that collide with WTGs which are not detected during collision monitoring) are accounted for.

Avian collision monitoring plan

- An avifauna collision monitoring program should be provided 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 A for guidance. The EIS should also outline how non-detections (i.e., birds that collide with WTGs, transmission lines, vehicles or associated infrastructure but are not detected during collision monitoring) will be accounted for.

[14] As defined in Appendix A of these Guidelines.

Carcass management program

- Provide details of how food resources (e.g. carcasses) for avian species such as WTE and WBSE will be managed across the site to address collision risk with WTGs, transmission lines, vehicles or associated infrastructure with consideration of monitoring along roadsides, around WTGs and beneath transmission lines. Include the potential implications of any anticipated changes to land use prior to, during and after construction.

Offset Strategy

- Detail measures to offset any residual, adverse impacts on threatened species after full implementation of the avoidance and mitigation steps of the mitigation hierarchy.
- Where offsets are required, provide an offset strategy that details likely benefits from proposed offsets including consideration of effectiveness. Note that offset actions proposed must have a measurable and relevant benefit which would otherwise not have occurred. Include details of how the offsets were determined, and will be secured, managed and monitored. Include management actions, responsibility, timing, performance measures and the specific environmental outcomes to be achieved.
- Proposed offsets must be consistent with the following documents as relevant, or any amendments or substitutions to these documents:
    - *EPBC Act Environmental Offsets Policy*
    - *Tasmanian Offset Guidelines for Impacts to Threatened Eagles from Wind Farm Developments*
    - *Guidelines for Terrestrial Natural Values Surveys related to Development Proposals*

6.2 Non-Avian Fauna

The EIS should discuss the potential impacts of construction and operation of the proposal and any associated infrastructure on non-avian fauna, with specific reference to threatened species, including those listed under the TSPA, NCA and EPBC Act. When discussing impacts on species please note whether the assessment has been made against Tasmanian or Commonwealth legislation.

With respect to MNES, the EIS should reference the Significant Impact Guidelines 1.1 – Matters of National Environmental Significance. Specifically, the EIS should discuss the significant impact criteria for each species noting the significant impact criteria is different for each matter of national environmental significance, AND each species' listing status (critically endangered, endangered, vulnerable and migratory). Reference should also be made to the Commonwealth's draft *Onshore Wind Farm Guidance - best practice approaches when seeking approval under Australia's national environment law*.

6.2.1 Existing Environment

- Describe and map known records of non-avian fauna within the proposal site and surrounding areas as relevant with reference to threatened species listed under the TSPA, NCA and EPBC Act. It is noted a desktop assessment of the Project area indicates that there are 13 records of threatened fauna listed under the TSPA and/or the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) likely to occur within five kilometers of the Project area, and an additional three species whose range occurs within or close to the Project area. For listed species provide the listing status under both Tasmanian and Commonwealth legislation.
- Provide a description of MNES within the proposal site and surrounding areas.
- Provide the results of natural values surveys undertaken by a suitably qualified person(s), in accordance with relevant survey guidelines,[15] for non-avian fauna species including but not limited to:
    - Tasmanian devil (*Sarcophilus harrisii*) – listed as endangered under EPBC Act and TSPA.
    - spotted-tailed quoll (*Dasyurus maculatus*) – vulnerable under EPBC Act and rare under TSPA.

[15] See https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments

- eastern quoll (*Dasyurus viverrinus*) – endangered under the EPBC Act.
- eastern barred bandicoot (*Parameles gunnii*) – vulnerable under the EPBC Act.
- ptunarra brown butterfly (*Oreixenica ptunarra* ssp. *ptunarra*) – endangered under EPBC Act and TSPA.
- tussock skink (*Pseudemoia pagenstecheri)* – vulnerable under the TSPA.
- water dependent threatened species.

- Provide information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the proposed action.
- Include information about the identification of threatened and other non-avian fauna including survey data and historical records. Include survey effort, timing, and an assessment of the adequacy of the surveys.
- Surveys should be done in accordance with the Guidelines for Natural Values Surveys related to Development Proposals and other relevant guidelines. Surveys should determine if any habitat for the above-mentioned species is present and should include a check of mature trees for hollows that may potentially provide nests for masked owls and swift parrots, and denning habitat for Tasmanian devils and quolls. If surveys identify any threatened fauna, nests, dens or hollows, further information should be sought from NRE Tas before any development works commence. It is requested that all survey data be submitted to the Natural Values Atlas within 90 days of the survey results being finalised.
- Specific guidance for Tasmanian devil (*Sarcophilus harrisii*) and spotted-tailed quoll (*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 Management Advice.
    - In the absence of specific guidelines for the spotted-tailed quoll, the Tasmanian Devils - Devil Survey Guidelines and Management Advice can be applied, given they have similar habitat requirements and are susceptible to a similar range of threats.
    - When considering areas for survey it is important not to make assumptions regarding habitat that devils may or may not inhabit.
    - 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 should be mapped in relation to the position of proposed infrastructure and roads 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 Tasmanian Devils - Devil Survey Guidelines and Management Advice.
    - If any potential dens for the Tasmanian devil or the spotted-tailed quoll are recorded within the Project area and are likely to be impacted by the development, these should be monitored and managed in accordance with the Devil Guidelines.
    - Any dens that are proposed to be destroyed will require a permit to take under the NC Act.
    - A baseline roadkill survey of the surrounding main access roads should be conducted to enable the modelling of likely estimates of increase.
    - In relation to assessing roadkill risk, include a summary (e.g., table) showing what new roads/tracks are proposed, and how much distance they cover. Where possible, fragmenting forests with roads should be avoided. 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.

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

- Specific guidance for ptunarra brown butterfly (*Oreixenica ptunarra* ssp. *ptunarra*):
  - The ptunarra brown butterfly has previously been recorded on the Project site and *Poa* grass, a suitable habitat for the species, has also been identified on the Project site. Surveys for the species should be undertaken in areas where *Poa* grass occurs (i.e., grasslands, grassy woodlands, grassy shrublands) during the adults flying season (March to mid-April) on warm, sunny days with little wind.

6.2.2 Assessment

- Describe the potential impacts of the construction and operation of the proposal and any associated infrastructure on native non-avian fauna, with particular reference to MNES, and threatened species listed under the EPBC Act, TSPA and NCA, including consideration of:
  - Any relevant threatened species Recovery Plans, Listing Statements or Conservation Advice for current information on species foraging habitat requirements, known and potential threats to species recovery, evidence for impact, and risk ratings, and comprehensive review of current literature for the species.
  - Direct impacts, such as collision risks from both vehicles and infrastructure, clearing or other physical changes to breeding and hunting or foraging habitat and impacts to nests dens or burrows (e.g. Tasmanian wombat).
  - Indirect impacts, such as changes in disturbances to nesting, impacts of noise and light, changes in prey or food availability or introduction of pests or diseases.

    In regard to light pollution, detail regarding proposed lighting infrastructure, lighting regimes, positioning, and lighting type during different stages of the proposal should be provided, having regard to the Department of the Environment and Energy National Light Pollution Guidelines for Wildlife.
  - Cumulative impacts with the Cattle Hill Wind Farm, St Patricks Plains Wind Farm, Cellars Hill Wind Farm
  - Assess the significance of identified impacts.

6.2.3 Avoidance and Mitigation Measures

- Describe management measures that will be implemented to avoid adverse impacts to threatened non-avian fauna including management of weeds, pests and diseases. 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, and changes in land use.
- Include any roadkill management measures as required in the *Tasmanian Devil Survey Guidelines and Management Advice.*
- Where impacts cannot be avoided, present proposed measures to minimise and mitigate adverse impacts on biodiversity and nature conservation values.
- Identify potential residual impacts[16].
- Detail measures to compensate for any residual, adverse impacts after full implementation of the avoidance and mitigation steps of the mitigation hierarchy

[16] As defined in Appendix B of these Guidelines.

- Where offsets are required, provide an offset strategy (as detailed in 6.1.4) consistent with the *Tasmanian Devil Survey Guidelines and Management Advice*.

6.3 Flora and Vegetation Communities

Discuss the impacts of the proposal and any associated infrastructure on native vegetation communities, ecological communities and flora with specific reference to those listed under the TSPA, NCA and EPBC Act. When discussing impacts on species please note whether the assessment has been made against Tasmanian or Commonwealth legislation.

With respect to MNES, the EIS should reference the Significant Impact Guidelines 1.1 – Matters of National Environmental Significance. Specifically, the EIS should discuss the significant impact criteria for each species noting the significant impact criteria is different for each matter of national environmental significance, AND each species' listing status (critically endangered, endangered, vulnerable and migratory). Reference should also be made to the Commonwealth's draft *Onshore Wind Farm Guidance - best practice approaches when seeking approval under Australia's national environment law*.

6.3.1 Existing Environment

- Describe and map known records of flora and vegetation communities including MNES, and threatened species, Threatened Ecological Communities (TEC) and Threatened Native Vegetation Communities (TNVC) listed under the EPBC Act, TSPA and NCA. A desktop assessment of the Project area indicates:
    - there are records of six TNVCs listed under the NCA, including *Eucalyptus tenuiramis* forest and woodland on sediments, Highland grassy sedgeland, Highland poa grassland, Riparian scrub, Sphagnum peatland and Wetlands. However, it is noted the existing mapping in TASVEG 4.0 and TASVEG Live for the Project area is of low reliability due to outdated imagery and a lack of up-to-date field validation.
    - there are records of 24 flora species listed as threatened under the TSPA that are likely to occur within five kilometres of the development footprint.
    - extensive areas of threatened Highland *Poa* grassland occur within the development footprint which contain numerous threatened flora populations, especially to the east of Bashan Road. This area also contains a significant population of *Discaria pubescens* which is listed as endangered under the TSPA.
- Surveys for threatened flora and vegetation communities in areas where vegetation clearance or soil disturbance is proposed should be undertaken by a suitably qualified ecologist. The results of the surveys should be provided, including historical data, details of survey effort, timing, and an assessment of the adequacy of the surveys. Surveys of vegetation communities should detail vegetation type, extent, location, and condition.
    - Surveys should give equal consideration to areas with temporary impacts (e.g., open cut trenching for underground power reticulation cables, material laydown areas) and permanent impacts (e.g., new turbine hardstand areas, substations, access tracks, roads, and proposed extension of existing clearance around WTGs).
    - Surveys of orchids, tiny annuals or ephemeral species should be undertaken at a suitable time to capture species during their flowering season to aid identification. Some species may require targeted surveys over multiple years to compensate for seasonal variation. Information on optimal survey times is available for many species on the Threatened Species Link website.
    - Survey methodology, data collection practices, data standards and reporting should follow the *Guidelines for Natural Values Surveys – Terrestrial Development Proposals.*
    - If any listed threatened flora species are identified and will be impacted by the proposed development, a permit to take under the TSPA will be required. The processing of permit applications may take up to four weeks. Information on applying for a permit, including application

forms, can be found on the NRE Tas website: Permit to Take Threatened Species (for Consultants & Development-related Activities).
    - Consultants undertaking vegetation surveys are encouraged to engage with NRE Tas's Natural Assets Spatial Intelligence Section (NASIS).
    - Any discrepancies between field survey results and the existing TasVEG layer should be submitted directly to the NVA.
- Specify and map known records of weeds, pests and diseases.
- Detail known/recorded populations and known or potential habitat, including habitat in the area surrounding the proposed action.

6.3.2 Assessment

- Describe potential impacts of both construction and operation of the proposal on flora and vegetation communities with particular reference to MNES, and threatened species, TECs and TNVCs listed under the EPBC Act, TSPA and NCA, including consideration of:
    - Relevant threatened species Recovery Plans, Listing Statements or Conservation Advice for current information on species requirements, known and potential threats to species or vegetation communities, evidence for impact, and risk ratings, and comprehensive review of current literature for the species.
    - Direct impacts, such as disturbance, clearing, excavation or burning.
    - Indirect impacts, such as changes in hydrogeological flows, fragmentation and edge effects, or the introduction of weeds, pests or diseases.
    - Cumulative impacts with the Cattle Hill Wind Farm, St Patrick Plains Wind Farm and Cellars Hill Wind Farm.
- Assess the significance of identified impacts.
- Please note that in areas where excavation, track building, or construction activities are planned around wetlands and waterways, the proponent should adhere to the legislation, policies, and guidelines set out in the NRE Tas Wetlands and Waterways Works Manual.

6.3.3 Avoidance and Mitigation Measures

- Describe management measures that will be implemented to avoid adverse impacts to flora and vegetation communities.
- Outline measures to control the spread of weeds, pests and diseases. Information about controlling the introduction and spread of weeds and the development of weed and disease management plans can be found in the *Weed and Disease Planning and Hygiene Guidelines – Preventing the Spread of Weeds and Diseases in Tasmania*.
- Where impacts cannot be avoided, present proposed measures to minimise and mitigate adverse impacts on flora, vegetation communities, wetland and habitat.
- Identify potential residual impacts[17].
- Discuss rehabilitation of disturbed areas following the completion of construction activities including any proposed seed collection and progressive rehabilitation program.
- Detail measures to compensate for any residual, adverse impacts after full implementation of the avoidance and mitigation steps of the mitigation hierarchy
- Where offsets are required, provide an offset strategy (as detailed in 6.1.4)

[17] As defined in Appendix B of these Guidelines.

6.4 Other Natural Values

6.4.1 Existing Environment

- Specify and map known sites of geoconservation significance or natural processes (such as fluvial or coastal features) within the vicinity of the proposal, including sites of geoconservation significance listed on the Tasmanian Geoconservation Database.
- Identify areas of reserved land or conservation significance in the vicinity of the proposal, including:
    - designated conservation areas; and
    - wetlands listed in Directory of Important Wetlands in Australia.
- Identify any freshwater ecosystems of high conservation management priority, including values, in the vicinity of the proposal using the Conservation of Freshwater Ecosystem Values (CFEV) database.

6.4.2 Assessment

Describe potential impacts of both construction and operation of the proposal on:

- Identified sites of geoconservation significance or natural processes.
- MNES including areas relating to the requirements of international treaties (e.g. Japan-Australia and China-Australia Migratory Bird Agreements (JAMBA/CAMBA) and Ramsar (wetlands) Convention).
- Existing conservation areas or reserved land that may be affected by the proposal, with reference to the management objectives of the reserved land and the reserve management plan(s) (if any). In particular, it is noted the proposed site is directly adjacent to a conservation covenant (ID 10936) and close to three other covenants (IDs 10800, 14315 and 14388).
    - Detail activities that will occur close to the covenants (e.g., boundary fencing, construction, operation) and assess potential impacts.
- Other sites or areas of special conservation significance, including areas of wilderness or scientific value.
- The reserve system identified as part of the Tasmanian RFA, including high-quality wilderness areas; maintenance of forest communities under the Permanent Native Forest Estate Policy; wildlife habitat strips under the Tasmanian Forest Practices Code 2015; and non-forest communities.

6.4.3 Avoidance and Mitigation Measures

Describe management measures that will be implemented to avoid adverse impacts to MNES, sites of geoconservation significance, conservation areas and reserved land.

- Where impacts cannot be avoided, present proposed measures to minimise and mitigate adverse impacts on MNES, sites of geoconservation significance, conservation areas and reserved land
- Identify potential residual impacts.
- Discuss any offset proposed for residual impacts, including likely benefits from such an offset and consideration of effectiveness, having regard to the Tasmanian Guidelines for Natural Values Surveys – Terrestrial Development Proposals.

6.5 Air Quality

Discuss potential impacts of the proposal on the local and regional air environment during construction and operation stages. Additionally, it should provide evidence that the activity will not cause environmental nuisance or harm.

6.5.1 Existing Environment

- Provide a site map that includes the boundary of the project area with respect to the location of nearest sensitive receptors.
- Describe the existing environment including climatic/meteorological conditions, terrain, land use and air quality in the vicinity of the proposal.

6.5.2 Assessment

- Provide a figure showing the locations and names of all potential sources of atmospheric emissions from the proposed activity.

- Describe all potential sources (point and fugitive) of atmospheric emissions and the composition of the atmospheric emissions, including but not limited to: dust and engine exhaust that may arise from activity on the site as well as from loading, unloading, and transport of materials. Consider dust from construction phase activities, which include land clearing and excavation work, stockpiles, vehicle movements, concrete batch plants, quarrying activities (if applicable), and loading, unloading and transport of materials.
- Describe and assess the potential impacts of the atmospheric emissions from the proposed activity on nearby sensitive receptors and on the local environment in a context of the existing environment (local meteorology, terrain) and land use.
- Describe climate change projections relevant to the project area, and how the future climate may change the local meteorology and the impact of air emissions from the proposal.
- Demonstrate that the assessment is consistent with the requirements of the *Tasmanian Environment Protection Policy (Air)* and any supplementary documents (including the *Board Statement Jan 2022*).

6.5.3 Avoidance and Mitigation Measures

- Describe measures to be implemented to mitigate all atmospheric emissions from the project area that may cause environmental nuisance or harm at or beyond the site boundary.
- Where a potential for impact on sensitive receptors is identified, the deployment of suitably located dust deposition monitors should be considered to determine the extent of the impact. Data from the monitors should be used to develop appropriate mitigation measures.
- Describe application of appropriate dust control management and mitigation measures as referenced in in section 7.5 of the *Quarry Code of Practice* (where applicable).

6.6 Water Quality

Discuss potential impacts of the proposal on surface water during construction and operation, including the aqueous transport of sediment and other pollutants during construction, and any sediment scouring and deposition changes post-construction.

For information about the water quality management framework and evaluation criteria in Tasmania, refer to *Technical Guidance for Water Quality Objectives (WQOs) Setting for Tasmania, August 2020*.[18]

6.6.1 Existing Environment

- Provide a description and map of the project area with respect to topography and preferential surface water flow, existing surface water and stormwater drainage.
- Consistent with the *State Policy on Water Quality Management 1997* and the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018* (ANZG 2018), identify surface water bodies that may potentially be impacted by the proposal during construction and operation, and specify relevant water quality guidelines values for the protection of those values[19], sensitive uses and associated water quality considerations; seasonal water quality, hydrological characteristics and biological condition of the receiving environment, and potential impacts to water quality as a result of the proposal having regard to the following:
    - the Environmental Management Goals for Tasmanian Waters Derwent River Catchment;
    - the Tasmanian Conservation of Freshwater Ecosystem Values database; and
    - any conservation listings, or survey of community uses should be provided in determining receiving water community values.

[18] See https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20(WQOs)%20Setting%20for%20Tasmania.pdf
[19] See https://epa.tas.gov.au/environment/water/pevs-for-tasmanian-surface-waters

- For receiving water bodies that may be impacted by the proposal, water quality guideline values for the protection of identified community values should be determined, consistent with the *State Policy on Water Quality Management 1997*. As a minimum, refer to: Technical Guidance for Water Quality Objectives (WQOs) Setting for Tasmania, August 2020 and relevant default guidelines values published by the Environment Protection Authority Tasmania, and *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018* (ANZ 2018). Site specific information including any historical water quality data and site-specific monitoring should be used where ongoing impacts are possible.
- Monitoring programs should be developed to determine baseline, ecosystem condition, water quality and potential water quality impacts. Include the results of monitoring in a water quality report and provide separately as digital data. Provide metadata and monitoring data to the EPA following the instructions and using the Excel workbook templates or file formats provided on the Water Quality Data Elements[20] webpage.

6.6.2 Assessment

Assess the potential water quality impacts to identified receiving environments against the selected water quality guideline values.

- Identify and characterise all liquid emissions that could arise from the proposal, including from industrial processes, concrete batch plants, waste treatment processes, fuelling, domestic/office facilities, stormwater or other sources. Consider seasonal variations in wastewater and receiving environment water quality and quantity.
- Describe proposed wastewater and/or stormwater treatment for all stages of the development. Describe the selected treatment technology, the likely volume and quality of effluent/water that will be produced and its fate in the environment.
- Taking into account preferential flow of stormwater arising from rainfall on the proposal site, provide details of, and a map depicting:
    - proposed wastewater discharge locations
    - location of stormwater collection systems (as relevant).
- Provide a preliminary erosion and sediment control plan detailing the potential for mobilisation of sediment for each significant construction element and/or environmental setting that is identified, and mitigation measures detailed in accordance with best practice erosion and sediment control principles (i.e., the International Erosion Control Association's Best Practice Erosion and Sediment Control documents at Publications - International Erosion Control Association (austieca.com.au) or similar). As a minimum the plan should include:
    - Classification of erosion potential for each land type and topography likely to be disturbed by any construction activities including roads, turbine pads, laydown areas and other works yards.
    - Details of measures to be employed to minimise erosion potential including, staging of works, temporary surface treatments, cut-off drains, temporary drainage controls and rehabilitation staging.
    - Design specification for temporary and permanent drainage control and sediment containment infrastructure i.e., design rainfall average recurrence interval and emission limits for sediment retention basins.
    - For works that are significant in scale or pose an erosion risk, plans detailing erosion and sediment control infrastructure to be installed at those locations should be provided. Plans for each significant work phase and the operational phase if controls require adjustment through the construction process, should also be provided. For other works, general plans of erosion and control measures sufficient to enable comparison between plans and constructed infrastructure.
- Detail any measures to mitigate impacts to Sphagnum peatland, including direct impacts from physical works and indirect impacts from hydrological changes.

[20] See https://epa.tas.gov.au/environment/water/water-quality-data-elements

- Assess the impacts of disposal of wastewater released from concrete batching plants and opportunities for reuse of the wastewater.

6.6.3 Avoidance and mitigation measures

- Discuss how impacts will be avoided and minimised through the proposal design and construction methodology.
- Where impacts cannot be avoided, proposed measures to mitigate adverse impacts on surface water quality, including consideration of effectiveness, should be discussed. Justification for any proposed emission of contaminants to surface waters should be in accordance with the principles of the *State Policy on Water Quality Management 1997* and with application of a 'weight of evidence approach' consistent with the framework of ANZG 2018. Refer to the Technical Guidance for Water Quality Objectives (WQOs) Setting for Tasmania for information regarding the water quality management framework and evaluation criteria.

6.7 Groundwater

Discuss potential impacts of the proposal on groundwater (quality and quantity), including the release of sediment, contaminants and other pollutants during construction. Consider construction and operation phases and include methodology details where appropriate.

6.7.1 Existing Environment

- Provide a conceptual site-specific groundwater model with cross sections and plan view figures indicting sources that could impact groundwater quality, the groundwater pathway (including direction of groundwater flow) and aquatic environmental receptors.
    - For the project area discuss local and intermediate scale groundwater flow systems and how construction footprints and any proposed groundwater extraction or dewatering may impact existing groundwater flow vectors in the short and long term.
- Provide a map showing the location of existing groundwater extraction bores nearest to the area impacted by the activity. Refer to NRE's Groundwater Information Access Portal where relevant.[21]
- Identify any groundwater dependent ecosystems that may receive groundwater from areas impacted by the proposal or be impacted by hydrological changes resulting from construction and operations of the proposal.
- Provide details of any baseline groundwater quality and standing water level monitoring undertaken.

6.7.2 Assessment

- For any groundwater extraction, provide the required yield, volumes, and process for bore establishment and ongoing management post construction.
- Discuss the potential impact of the proposal on groundwater (quality and quantity), including release of sediment and other pollutants during construction, with reference to groundwater assessments undertaken where appropriate.
- Justification for any proposed emission of contaminants to groundwater waters should be in accordance with the principles under the *State Policy on Water Quality Management 1997*[22] and with reference to likely groundwater community values, associated guideline values, and guideline values for receiving aquifer(s). For information regarding the water quality management framework and evaluation criteria in Tasmania refer to *Technical Guidance for Water Quality Objectives (WQOs) Setting for Tasmania*.

[21] See https://wrt.tas.gov.au/groundwater-info/
[22] See https://epa.tas.gov.au/about-the-epa/policy-legislation-cooperative-arrangements/statutory-policies/state-policies-and-environment-protection-policies/state-policy-on-water-quality-management-1997

6.7.3 Avoidance and mitigation measures

- If necessary, mitigation should be proposed for potential impact to receiving environments from changed groundwater quality or flow. Where relevant, controls to prevent migration of contaminants to groundwater at any storage locations for potentially contaminating materials should be detailed.

6.8 Potential acid sulfate soils (PASS) / Acid sulfate soils (ASS)

Identify potential acid sulfate soils (PASS) / acid sulfate soils (ASS) which may be disturbed by the proposal and/or any associated infrastructure.

- Describe whether PASS/ASS may be present and potentially disturbed by the proposal. As a minimum a desktop assessment containing the following should be included:
    - soil profiles, including any test pit and bore log data;
    - geology, hydrogeology, and geomorphology;
    - detail of development footprint, proposed construction methodology and the extent of disturbance;
    - the time period over which sub surface materials are likely to be exposed;
    - any proposed groundwater extraction and associated drawdown; and
    - initial geochemical testing in areas where PASS/ASS may be disturbed.

- Outline the potential volumes of ASS that may require management, discuss whether geotechnical and geochemical testing is required prior to disturbance, and if relevant how results will be used to make decisions regarding construction management and PASS/ASS impact mitigation.

- If significant disturbance of PASS/ASS is likely to occur due to structure footings or other sub-surface works, provide an ASS management plan consistent with the Tasmanian ASS Management Guidelines[23] and the Commonwealth ASS Guidelines[24] for the proposal. The ASS management plan should contain as a minimum:
    - Identification of receptors and the risk to receptors from PASS/ASS disturbance with consideration of all proposal stages (e.g., from scouring of sediment due to altered flow patterns).
    - Discussion of potential consequences of disturbance (i.e., potential impacts/risks), and evaluation of their significance, including consideration of water quality, natural values, and karst systems.
    - Proposed management and mitigation measures for minimising impacts of PASS/ASS during construction and long-term use/operation, including storage, monitoring, and disposal as relevant, including consideration of the following:
        - The management of excavated spoil which may contain PASS/ASS;
        - The management of intersected groundwater and groundwater ingress and associated groundwater drawdown where PASS/ASS may be present;
        - Where treatment of excavated PASS/ASS is proposed at a specialised facility, detail potential locations, the size of the facility, pad design, and treated water management and discharge criteria.
    - Detail disposal options for excavated and treated PASS/ASS including any onsite or off-site disposal locations and the disposal method.

[23] See https://nre.tas.gov.au/agriculture/land-management-and-soils/soil-management/acid-sulfate-soils
[24] See https://www.waterquality.gov.au/issues/acid-sulfate-soils

6.9 Noise emissions

Discuss the potential for noise and vibration emissions from construction and operation of the proposal to result in environmental nuisance or environmental harm to noise sensitive premises.

- Identify, locate, and describe potential sources of noise (including associated sound power levels and 1/3 octave data to assess for low frequency and tonal noise).
- Identify, locate, and describe potential sources of vibration.
- Identify and locate noise sensitive premises in the vicinity of the proposal.
- Establish the existing background noise level in the area with particular focus on noise sensitive premises likely to be impacted by the proposal.
- Based on the existing background noise level and relevant guidelines, propose appropriate noise level criteria for day, evening and night-time periods applicable to the construction and the operation phase of the proposal.
- Propose appropriate vibration level criteria for the construction and operational phases of the proposal.
- Predict noise emission levels (noise modelling is required, including contour maps) at sensitive receptors for the construction phase of the proposed proposal.
- Predict operational noise levels (noise modelling is required, including contour maps) from the proposal associated noise sources (i.e. wind turbines, substation and battery storage) and discuss whether cumulative noise impact will meet the project specific noise criteria. Wind turbine generator noise modelling must be based on maximum turbine sound power levels proposed for the site.
- Predicted results should consider the required adjustment factors to be applied for intrusive and dominant characteristics as discussed in the *Tasmanian Noise Measurement Manual* and identify areas where the predicted equivalent noise levels ($L_{Aeq,10minute}$) exceeds 35 dB(A).
- Provide contour maps showing the impact of noise emissions from the existing Cattle Hill Wind Farm, approved St Patricks Plains Wind Farm, and, if possible, the proposed Cellars Hill Wind Farm on the proposed project operational noise predictions and identify areas where:
    - The predicted equivalent noise levels ($L_{Aeq,10\ minute}$) exceed 35 dB(A).
- Have regard to the following as relevant:
    - The EPA Board's Policy on noise limits for wind energy projects is 35 dB, or background + 5 dB(A), whichever is greater, at sensitive receptors and/or land zoned for sensitive uses.
    - The NZS 6808:2010 Acoustics – wind farm noise.
    - The Tasmania Noise Measurement Procedures Manual.
    - Tasmanian Environment Protection Policy (Noise) 2009.
- Discuss curtailment management options/scenarios to mitigate any unexpected failure (such as turbine mechanical issues) that generates intrusive or dominant characteristics or causes nuisance at noise sensitive premises.
- Discuss how impacts can be avoided and minimised through the proposal design.
- Discuss proposed construction noise management and mitigation measures, including management of noise complaints and options for noise and vibration monitoring and preparation of a construction noise and vibration management plan, if required.
- Discuss proposed operational noise monitoring, operational management and noise complaints mitigation strategies.

6.10 Shadow flicker

- Assess the potential for blade glint and intermittent shading of the sun by the blades of turbines to cause environmental nuisance or environmental harm to sensitive receptors. In doing so, have regard to *Australian Energy Infrastructure Commissioner 2022 Annual Report,* Appendix 5 of the *Clean Energy Council Best Practice Guidelines for Implementation of Wind Energy Projects in Australia, June 2018* and Attachment 1 of this notice. Include the following:
    - Consider the siting of turbines and consideration of turbine parameters (i.e., height and rotor diameter).
    - Provide shadow flicker modelling to determine the likelihood of impact to identified sensitive receptors in the vicinity of the proposal.
    - Discuss proposed management and mitigation strategies, if required.

6.11 Waste management

Discuss the impacts of waste generated by the proposal, during construction and operation.

- Describe the source, nature and quantities of all general wastes likely to be generated by the proposal (liquid, gaseous, solid or other), including used turbines and blades, general refuse and by-products from the various stages of the process.
- Describe the methods and facilities proposed to collect, store, reuse, treat or dispose of each general waste stream. Describe collection or other maintenance requirements where relevant.
- Describe the source, nature, quantity, and method of treatment, storage and disposal for each controlled waste arising from the proposal.[25] Describe collection or other maintenance requirements where relevant.
- Demonstrate that any waste management measures follow the following hierarchy of waste management, arranged in decreasing order of desirability: avoidance; reuse; treatment/stabilisation for reuse; recycling; energy recovery; repository storage (for future treatment/recovery); treatment/stabilisation for disposal; disposal/permanent containment.

For information on the landfill levy and reporting requirements for landfills or resource recovery facilities under the *Waste and Resource Recovery Act 2022* and Regulations, refer to Waste and Resource Recovery, Department of Natural Resources and Environment Tasmania website..[26]

6.12 Dangerous goods and environmentally hazardous materials

Dangerous goods and environmentally hazardous materials are 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. This includes fuels, oils, waste and chemicals. Discuss the potential impacts of dangerous goods and environmentally hazardous substances used in or generated by the proposal. The discussion should:

- Describe 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)[27] that will be used during the construction and operation of the proposal.

[25] Controlled waste is defined in EMPCA and associated regulations. A non-exhaustive listing of categories of controlled waste can be found at https://epa.tas.gov.au/business-industry/regulation/waste-management/controlled-waste

[26] See https://nre.tas.gov.au/environment/waste-and-resource-recovery

[27] See https://www.ntc.gov.au/codes-and-guidelines/australian-dangerous-goods-code

- Provide a map showing the location of temporary and permanent storage areas for fuels, oils, and other dangerous goods or chemicals.
- Detail measures to be adopted to prevent or control any accidental releases of dangerous goods and environmentally hazardous materials. Examples include bunding or spill trays.
- Provide contingency plans for when control measures fail, equipment breaks down or accidental releases to the environment otherwise occur. Include detail on proposed emergency and clean-up measures and notification procedures. Identify any safety management requirements for the protection of human health and safety where incidents may affect the community.

6.13 Greenhouse gas emissions, ozone depleting substances and climate change

Discuss potential impacts of the proposal in relation to greenhouse gases, ozone-depleting substances and climate change. The discussion should be proportionate to the significance of the potential impacts.

- Describe the direct and indirect effects of the proposal on greenhouse gas production and ozone-depleting substances, as well as any associated benefits of the proposal.
- Provide an inventory of projected scope 1, scope 2, scope 3 and total greenhouse gas emissions,[28] energy production, and energy consumption for a year of operation. Describe the methods used to develop the inventory[29]. Discuss potential annual variation that may occur.
- Demonstrate that the development will use cost-effective, best practice measures to minimise future greenhouse gas emissions.
- Detail measures proposed to minimise emissions and describe the anticipated effectiveness of these measures. Where less emissions-intensive options are not adopted, provide sufficient justification and/or mechanisms to offset greenhouse gas emissions.
- Estimate 'whole of life' greenhouse gas emissions for the proposed development. Include details of the methodology used.
- Describe the potential impacts of climate change upon the proposal. For example, it may be appropriate to plan for more intense storm events or more severe fire weather.
- 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 (State Action) Act 2008* (Tas),[30] *Tasmania's Climate Change Action Plan 2023-25*[31] and the *Climate Change Act 2022* (Commonwealth).[32]

Note: Proponents must determine whether they are required to report to the Commonwealth under the *National Greenhouse and Energy Reporting Act 2007*.[33]

6.14 Socio-economic issues

Discuss the social and economic impacts of the proposal. This discussion may:

- Include 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).

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[28] More information on categorising emissions can be found at https://www.cleanenergyregulator.gov.au/NGER/About-the-National-Greenhouse-and-Energy-Reporting-scheme/Greenhouse-gases-and-energy

[29] Calculators are available on the Australian Government Clean Energy Regulator website. See http://www.cleanenergyregulator.gov.au/NGER/Forms-and-resources/Calculators#Emissions-and-Energy-Threshold-Calculator-202021-and-user-guide

[30] See https://www.legislation.tas.gov.au/view/html/inforce/current/act-2008-036

[31] See https://recfit.tas.gov.au/climate/climate_change_action_plan

[32] See https://www.legislation.gov.au/Details/C2022A00037

[33] See https://www.legislation.gov.au/Details/C2007A00175

- Provide a summary of operational expenditures and revenues.
- Describe 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.
- Describe impacts on upstream/downstream industries, both locally and for the State.
- Detail the extent to which raw materials, equipment, goods and services will be sourced locally.
- Provide 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.
- Describe community demographic impacts (changes to cultural background, occupation and incomes).
- Describe impacts on land values, and demand for land and housing.
- Describe impacts on the local, regional, state and national economies.
- Detail any publicly funded subsidies or services to be relied upon for the construction or operation of the proposal.
- Detail any impacts on local, state and federal government rate, taxation and royalty revenues.

Proposals with higher-level or broader-scale environmental impacts may need more comprehensive analysis of economic and social benefits, to allow the Board to evaluate both the benefits and adverse impacts of the proposal. Methods used to model social and economic impacts should be described where relevant.

6.15 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 Sustainable Timber Tasmania Fire Management Plan and a Parks and Wildlife Service Fire Action Plan for relevant districts.

6.16 EMF and ELF

Electricity transmission lines, substations and transformers emit extremely low frequency (ELF) electric and magnetic fields (EMF). At the request of the Director of Public Health, a health assessment is required of ELF and EMF fields with this compared against reference levels to determine whether mitigation measures are required. Have regard to the following as relevant:

- The International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines for Limiting Exposure to Time-Varying Electric and Magnetic Fields (1 Hz -100 kHz). The ICNIRP guidelines are consistent with Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) understanding of the scientific basis for the protection of the general public (including the foetus) and workers from exposure to ELF EMF.
- World Health Organisation (WHO) Environmental Health Criteria 238, Extremely Low Frequency Fields (2007).
- *National Health and Medical Research Council* Statement: *Evidence on Wind Farms and Human Health 2015*.

6.17 Infrastructure and off-site ancillary facilities

Discuss potential environmental impacts of the proposal on any significant off-site infrastructure or facilities (including increased use of existing infrastructure, such as roads, ports and quarries). Identify measures proposed to avoid and mitigate any possible adverse impacts. Assess the likely overall impacts after 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. Cross-reference to other sections where relevant.

6.18 Cumulative and interactive impacts

This section should contain an assessment of the potential cumulative impacts of the proposal, with consideration of all relevant issues specified in these guidelines. This should occur in the context of existing and approved developments in the region, including Cattle Hill Wind Farm, St Patricks Plains Wind Farm, and any associated developments such as transmission infrastructure. Other proposals which there is sufficient information available to the proponent to allow a meaningful assessment of their impacts, which may include Cellars Hill Wind Farm, 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. This section should include the following:

- Identify potential incremental adverse effects from all stages of the proposal, including during construction and operational stages.
- Consider past, present, and reasonably foreseeable future changes and/or developments within both the local and wider region and what this means for the proposal.
- Discuss the cumulative and interactive nature of the identified effects of those developments and of the proposal and whether any potential impacts are likely to be significant. In doing so, consider both significant and non-significant residual impacts of the proposed wind farm in the context of existing, approved, and likely developments in the region. For example, where the impact of the proposed wind farm on a threatened species is not considered to be significant, consider that impact in the context of impacts resulting from surrounding developments.
- Describe the measures to be implemented to avoid, minimise, or mitigate potential adverse cumulative and interactive impacts and how these impacts will be monitored and reported.

7. Monitoring and Review

Outline any proposed monitoring, review and reporting programs for the proposal. Include a table of proposed monitoring locations, parameters and frequencies, and a map showing the location of all monitoring sites.

Monitoring, review and reporting programs should be designed to:

- Assess compliance with the proposed management measures;
- Assess compliance with emission standards and other identified performance requirements;
- Assess the effectiveness of the performance requirements and environmental safeguards in achieving environmental quality objectives; and
- Assess the extent to which the potential impacts described in the EIS have eventuated.

8. Decommissioning and Rehabilitation

Describe any proposed rehabilitation of disturbed areas that will follow construction activities or occur upon cessation of the activity. Outline a preliminary Decommissioning and Rehabilitation Plan or Closure Plan for the proposal. If applicable, describe the stages of site decommissioning and rehabilitation, including any proposed seed collection and progressive rehabilitation.

9. Management Measures Table

Provide a summary table listing all management measures detailed throughout the EIS. Each measure must include a reference number, must be an unambiguous statement of intent, must specify when it is to be implemented (including whether it is to be implemented during construction, operation, maintenance or other phases) and must include a cross-reference to where the measure is described in the EIS.

10. Conclusion

Summarise the proposal and present a balanced overview of its net impacts. Draw together the critical environmental, social and economic impacts. Evaluate the extent to which negative impacts can be avoided, mitigated, remediated or compensated and positive impacts promoted and sustained.

Describe how the proposal meets and furthers the objectives of relevant legislation, policies, plans and strategies. Itemise the RMPS and EMPCS objectives and comment on how the proposal addresses each of the objectives.

11. References

Provide details of authorities consulted, reference documents and other information sources, using a consistent referencing style.

12. Appendices

Detailed technical information which supports the EIS should be included as appendices. The salient features of the appendices should be included in the main body of the EIS. Technical content of appendices must be consistent with information presented in the EIS itself, unless inconsistencies are carefully explained. The EIS may not be accepted where unexplained inconsistencies exist.

Appendix A: Bird and bat mortality monitoring plan guidance

- Introduction, include:
    - Brief project description and site location;
    - Site layout plan; and
    - Information about the proponent, including the person responsible.
- Objectives of the plan.
- Survey methodology, a should comprise a structured and statistically designed survey program and assume 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 (i.e., distance from the base of turbine);
    - Spacing of circular transects (i.e., 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 (i.e., whether the same search strategy will be suitable for all turbines based on terrain and surrounding vegetation);
    - How searches are undertaken and how many observers.
    - Management of searched areas (i.e., is vegetation clearance required 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; and
    - Who will conduct the searches (i.e., if informal searches will form part of the monitoring program how will the personnel be trained).
- 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; and
    - Survey duration.
- Incidental dead or injured bird and bat reporting, including actions taken.
- Reporting Requirements:
    - Detail the notification requirements to the Director, EPA 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, EPA; and
    - Reports of any dead or injured threatened species should be reported to the Department of Natural Resources and Environment Tasmania.
- Review of the mortality monitoring plan and adaptive management.

Appendix B: General principles for assessing environmental impacts

This Appendix summarises general principles for assessing environmental impacts in EIS documents prepared in accordance with EMPCA.

General Approach

When assessing environmental impacts in an EIS, the proponent should:

- Present information in a clear, well-structured manner appropriate to the audience of the EIS.
- Avoid duplication.
- Base assessments and evaluations on scientifically supportable, referenced data.
- Describe methodologies used and provide supporting research and information wherever relevant.
- State any scientific assumptions, simplifications, or judgements, and define uncertainties.
- Describe impacts and their mitigation to a level of detail that is proportionate to potential consequences and to what extent they can be controlled.

Impact assessment

Impact assessment involves the identification and characterization of the effects of a proposal. When undertaking impact assessment, the proponent should:

- Explain methodologies used to identify and characterise impacts.
- Clearly state the impacts that are expected to result from the development in terms of the aspect of the proposal involved and the environmental receptor affected.
- Characterise those impacts in terms of:
    - The magnitude of impacts, quantified where possible, including spatial extent and timeframe;
    - The vulnerability of the affected environmental receptors to harm or nuisance;
    - Sources of the impacts and pathways by which the impact may occur;
    - Probability of occurrence (if not 100%);
    - The range of scenarios in which the impact may occur, including plausible worst-case consequences;
    - Reversibility of impacts;
    - Any predicted indirect effects; and
    - Any aspects of other proposals examined cumulatively.
- With reference to the project description and alternatives described in the EIS, state what measures to avoid or reduce impacts have been considered as part of this assessment, and which of these have been incorporated into the proposal.

Impact evaluation

Impact evaluation is the determination of the significance of impacts. Proponents should support conclusions about the significance of impacts using a structured argument that clearly describes the magnitude of the impact, the sensitivity of the affected receptors, and how they relate. Cumulative impacts need to consider the assessed impacts on values/issues in the context of other developments (existing, approved or likely) in the region.

Mitigation and Monitoring

Mitigation (planning and design considerations, pollution control technology and management practices) and monitoring are measures additional to those considered during the impact assessment to reduce the impact of the proposal. In presenting mitigation and monitoring the proponent should:

- Describe the measures proposed;

- Describe how mitigation measures function to avoid or reduce the impacts;
- Explain how measures accord with existing guidance, accepted practice or best practice environmental management as defined in EMPCA;
- Discuss contingencies for the breakdown/malfunction of equipment or processes;
- Describe any anticipated impacts resulting from the mitigation actions and how these will be addressed; and
- Identify where control measures are to be carried out, operated and/or maintained by a third party, and how this will be achieved.

Residual impacts

Residual impacts are those that remain after all proposed avoidance and mitigation measures have been taken into account. When assessing residual impacts, the proponent should:

- Revisit the first evaluation of impact, taking into account the effects of the measures to reduce the magnitude of the impacts and present a revised statement of significance;
- Consider both State and Commonwealth legislation; and
- Where required, identify appropriate actions that will offset impacts, based on the relevant guidelines.[34] Offset actions must present a measurable, relevant and ongoing net benefit which would not otherwise have been realised, and which is not accounted for by any other project or proposal.

[34] Guidelines include Appendix 4: General Offset Principles from the Guidelines for Natural Values Surveys – Terrestrial Development Proposals, see https://nre.tas.gov.au/Documents/Guidelines%20for%20Natural%20Values%20Surveys%20related%20to%20Development%20Proposals.pdf and Offset Guidelines for Impacts to Threatened Eagles from Wind Farm Developments, see https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/offset-guidelines-for-impacts-to-threatened-eagles-from-wind-farm-developments

Appendix C: Other issues and agency contacts

In addition to a permit under LUPAA and EMPCA, there may be other legal requirements to allow your proposal to proceed, including other permits, licences or landowner consent. You may also need to contact other Government agencies to obtain information for the purpose of assessment.

Your proposal may have been referred to other agencies by EPA. If assessments or approvals outside of the Board's responsibilities are required, you should engage with the respective agency to progress them. The following list identifies some of the agencies you may need to contact:

Conservation Assessments
Department of Natural Resources and Environment Tasmania
Telephone: (03) 6165 4396
Email: conservationassessments@nre.tas.gov.au
Website: www.nre.tas.gov.au/conservation

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

Heritage Tasmania
Department of Natural Resources and Environment Tasmania
Telephone: (03) 6165 3700
Email: enquiries@heritage.tas.gov.au
Website: www.heritage.tas.gov.au

Purpose: Historic cultural heritage, including State-level site listings, impacts and permits as required under the Historic Cultural Heritage Act 1995. Where works are proposed in or near 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 Tasmania
Department of Premier and Cabinet
Telephone: 1300 487 045
Email: aboriginalheritage@dpac.tas.gov.au
Website: www.aboriginalheritage.tas.gov.au

Purpose: Aboriginal heritage, including desktop assessment, artefact survey requirements, permits and advice.

Parks and Wildlife – Property Services
Department of Natural Resources and Environment Tasmania
Telephone: (03) 6169 9015
Email: PropertyServices@parks.tas.gov.au
Website: www.parks.tas.gov.au

Purpose: Impacts on parks and reserves managed by Parks and Wildlife, or Crown land.

Agriculture and Water
Department of Natural Resources and Environment Tasmania
Telephone: 1300 368 550
Email: Water.Enquiries@nre.tas.gov.au
Website: www.nre.tas.gov.au/water

Purpose: Water licences and works impacting natural waterway flow (e.g. dams or fords).

Transport Services
Department of State Growth
Telephone: (03) 6166 3369
Email: permits@stategrowth.tas.gov.au
Website: www.transport.tas.gov.au

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

Mineral Resources Tasmania
Department of State Growth
Telephone: (03) 6165 4800
Email: info@mrt.tas.gov.au
Website: www.mrt.tas.gov.au

Purpose: Mining Leases.

Appendix D: Example of project description summary table

Location and Planning Context

Location	State the address of the site, and CTs and PIDs (as applicable) for all titles on which the activity will take place.
Land zoning	Describe the land zoning of the site and surrounds. If rezoning of the site is required, provide details.
Land tenure	Provide the land tenure of the proposal.
Use Class and Permissibility	If a permit is required under LUPAA, provide the Use Class of the proposed activity and Permissibility of the activity with reference to the relevant Planning Scheme.

For extractive industries only, delete if not required

Mining lease	
Lease area	
Bond	State the amount of any bond required by MRT (for extractive industries)

Existing site

Land Use	Describe the existing land use of the site and surrounds.
Topography	Describe the topography of the site and surrounds.
Geology	Describe the geology of the site, including the likely presence of potentially acid forming (PAF) material. Describe any geoconservation values on or near the site, e.g. karst.
Soils	Describe the potential to encounter acid sulphate soils and or contaminated soil (from past activities, as relevant).
Hydrology	Describe groundwater and surface drainage (including waterways, lakes, wetlands and coastal areas) Describe the waterbodies and aquatic values on site and in the surrounding area. State the distance from the activity to the nearest waterbody.
Natural Values	List the threatened fauna, flora and vegetation communities, including potential habitat for any such species, that are known to occur on or near the site (use the Natural Values Atlas, TASVEG 4.0 or results of any relevant survey). State the vegetation types on and near the site.
Potential Hazards	Provide a brief assessment of the vulnerability of the site to natural hazards (e.g. flooding, seismic activity, fire, landslips or strong winds) or climate change.

Local Region

Climate	State the annual rainfall and predominant wind direction.
Surrounding land zoning, tenure and uses	Describe the surrounding land use, distance to the nearest residences in other ownership, note any conservation reserves or recreation areas in the area, and provide a coastal description if the coast is nearby.
Species, sites or areas of conservation significance	Provide 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*).

Proposed Infrastructure

Major equipment	List all existing and proposed plant, machinery, or other major equipment (distinguish between existing and proposed).
Other infrastructure	List the existing and proposed buildings, structures, access roads, internal haul roads (can refer to the Site Plan) (distinguish between existing and proposed).

Inputs

Water	Include quantities and characteristics.
Energy	Include quantities and characteristics.
Other raw materials	Include quantities and characteristics.

Wastes and Emissions

Liquid	Include quantities and characteristics.
Atmospheric	Include quantities and characteristics.
Solid	Include quantities and characteristics.
Controlled wastes	Include quantities and characteristics.
Noise	Include major sources of noise emissions.
Greenhouse gases	Provide a brief description of changes to greenhouse gas emissions that will be caused by the proposal.

Construction, Commissioning and Operations

Proposal timetable	Provide a brief timetable outlining the proposed timeframe(s) for construction, commissioning and commencement of operations. Include significant milestones if applicable.
Construction hours	e.g. xx-xx Monday to Friday xx-xx Saturday
Operating hours (ongoing)	e.g. xx-xx Monday to Friday xx-xx Saturday

Other Key Characteristics

Other	Describe any additional characteristics relevant to the proposal/environment that are likely to provide important context as part of this summary.

ENVIRONMENT PROTECTION AUTHORITY