



EPA Board's Guidance

Issued under sections 60ZC(6) and (7) of the *Land Use Planning and Approvals Act 1993*

I, Andrew Paul, Chairperson, the Board of the Environment Protection Authority (the Board), acting in accordance with sections 60ZC(6) and (7) of the *Land Use Planning and Approvals Act 1993* (LUPAA), issue the Board's guidance for the Whaleback Ridge Renewable Energy Major Project (the Major Project) to the Tasmanian Planning Commission's Development Assessment Panel (the Panel).

I have considered the draft assessment criteria for the Major Project prepared by the Panel and publicly exhibited from 29 June 2024 to 15 July 2024, and the relevant representations referred to the Environment Protection Authority (EPA) by the Panel on 22 July 2024, respectively.

The guidance provided by the Board, as set out in Parts 1, 2, and 3 of this document, is in accordance with sections 60ZC(6) and (7) of LUPAA and the Environmental Impact Assessment Principles in section 74 of the *Environmental Management and Pollution Control Act 1994* (EMPCA), as modified by section 60ZC(9) of LUPAA. The Board's guidance sets out the information base that the Board requires the proponent to address in the Major Project Impact Statement (MPIS) in order for the Board to undertake an environmental impact assessment (EIA) of the Major Project as required by section 60ZC(4) of LUPAA.

The Board's guidance has been prepared in accordance with the proposal description in the Major Project Proposal prepared by ERA Planning & Environment dated 6 October 2023. The information requirements set out in the Board's guidance for assessing potential environmental impacts are applicable to any and/or all respective stages of the Major Project. Further, information provided in the MPIS about cumulative and interactive environmental impacts of the Major Project should address past, present and reasonably foreseeable future change and or/developments within the local and wider region, including associated development such as transmission infrastructure.

Attachment I of the Board's guidance provides advice received by the EPA from Public Health Services at the Tasmanian Department of Health in accordance with section 74(5) of EMPCA which identifies considerations for the MPIS to have regard to.

Further guidance on the EIA of the Major Project can be provided by the EPA, as required, in response to any requests from the Panel and/or proponent.

Signed:

A handwritten signature in blue ink, appearing to read 'Andrew Paul', written over a light blue horizontal line.

Andrew Paul

CHAIRPERSON, ENVIRONMENT PROTECTION AUTHORITY

Date: 05 August 2024

Part 1: General principles for assessing potential environmental impacts of the Major Project in accordance with the *Environmental Management and Pollution Control Act 1994 (EMPCA)* as modified by the *Land Use Planning and Approvals Act 1993 (LUPAA)*

The major project assessment process involves a coordinated assessment in accordance with several pieces of legislation. The Board of the Environment Protection Authority (the Board) is required to carry out an environmental impact assessment (EIA) of the Major Project under EMPCA, as modified by LUPAA. The Major Project Impact Statement (MPIS) is required to address the assessment criteria. Where an assessment of environmental issues and information on the potential environmental impacts of the Major Project is required, this guidance sets out the information base that should be included in the MPIS in order for the Board to undertake its EIA and provide its advice to the Development Assessment Panel (the Panel). The assessment criteria and this guidance should be read together to ensure that the MPIS addresses all matters that are relevant to both the Panel's assessment, and the Board's EIA.

The MPIS should also have regard to the following to ensure that the Board can undertake its EIA of the Major Project and provide advice to the Panel:

- a) Furthering the objectives at Schedule 1 of EMPCA;
- b) Implementation of best practice environmental management as defined in EMPCA;
- c) All proposed stages and aspects of the Major Project, including ancillary and/or other level 2 activities;
- d) The general principles and information requirements provided in Parts 1, 2 and 3 of this document; and
- e) Advice provided by Public Health Services, Department of Health Tasmania in relation to the Major Project in accordance with section 74(5) of EMPCA.

While some details of the Major Project may not be finalised at the time the MPIS is submitted, the information in the document should be as up to date as possible. Where information is unavailable or details have not yet been finalised, estimates and the range of alternative options should be provided. Sufficient technical detail should be provided to enable an appropriate level of assessment.

Existing conditions

Describe the existing environment in relation to the impact, including the vulnerability of the potentially affected environment. Analysis of potential environmental impacts should be in relation to the existing environment.

Performance requirements

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

Potential impacts

Identify all potential environmental impacts (positive and negative) of the Major Project, inclusive of construction, commissioning, operation, decommissioning and rehabilitation stages, in the absence

of proposed control measures. Any foreseeable variations in impacts during the construction, commissioning, and operational stages should be identified and an analysis of the significance of the relevant impacts included.

The level of detail provided on each issue should reflect the level of significance of that environmental issue to the Major Project.

Potential impacts should be characterised in terms of:

- The magnitude of the impact, quantified where possible, including spatial extent and timeframe;
- The vulnerability of the affected environmental and/or sensitive receptors to the impact;
- Sources of the impacts and the 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 scenario consequences;
- Reversibility of the impact; and
- Any predicted indirect effects.

Potential cumulative impacts of the Major Project in light of other activities or developments underway or approved should also be addressed. Interactions between biophysical, socio-economic, and cultural impacts should be identified.

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

Any positive impacts likely to result from the Major Project should be identified. Where positive impacts are claimed, it may be appropriate to explain what measures are to be taken to ensure that those positive outcomes are realised and sustained.

Avoidance and mitigation measures

Describe the measures proposed to avoid, minimise, or mitigate potential adverse impacts having regard to best practice environmental management as defined in EMPCA. Analyse the effectiveness of the measures. Describe how and to what degree the impacts will have been avoided, minimised, or mitigated. Where there are clear alternative avoidance or mitigation measures for a particular adverse environmental impact, the alternatives should be reviewed, and the preferred option justified. A discussion of the achievability of the measures should be provided.

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

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

All proposed management measures should be clearly identified in the MPIS. Specific measures may be presented in the form of a management plan, such as an Environmental Management Plan (EMP), that sets out the framework for management, mitigation, and monitoring of relevant impacts of the action, including any provisions for independent environmental auditing. The EMP should address the Major Project stages separately.

Assessment of residual impacts

An assessment of the overall impacts of the Major Project on the environment after allowing for the implementation of proposed avoidance and mitigation measures should be provided. This should include an evaluation of the significance of impacts, the potential for emissions to cause environmental and health impacts, and reference to relevant guidelines or standards including state, national, and international regulations where relevant.

If applicable, the reasons why avoidance or mitigation of impacts cannot be reasonably achieved should be included. Any net benefits likely to result from the Major Project should be identified.

The impacts of the Major Project in terms of the constraints or benefits it may place on the current or future use of land within the Major Project site and surrounding area should be discussed, including as a result of environmental impacts or emissions, particularly impacts to sensitive and/or other land uses.

Offsetting unavoidable adverse impacts

Alternatives and options to avoid, minimise, and mitigate the adverse environmental impacts of the Major Project should be adequately addressed prior to the consideration of offsets. If adverse residual impacts from the Major Project are considered unavoidable despite the adoption of best practice environmental management avoidance and mitigation measures, actions to offset such impacts should be proposed and discussed. For example, if the loss of conservation values, community assets, or amenities is considered unavoidable, actions to compensate for those losses should be proposed in proportion to the loss. Offset actions proposed should 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.

Environmental impact conclusion

An overall conclusion as to the environmental acceptability of the Major Project should be provided, including discussion of whether the Major Project is consistent with the principles of ecologically sustainable development and the objectives and requirements of EMPCA.

Part 2: Information the Board requires to be provided in the MPIS in order for the Board to undertake its environmental impact assessment of the Major Project

The information requirements set out in this guidance document include survey and study requirements for specific issues which are considered to involve a higher level of environmental risk, relevant environmental performance and legislative requirements, associated regulations and policies, and reference to industry standards or best practice environmental management.

The MPIS should identify all potential environmental impacts and describe the proposed measures to avoid, minimise and mitigate adverse consequences for each of the environmental issues identified below. The detail provided on each environmental issue should reflect its level of significance. While key environmental issues are identified for the Major Project, other environmental issues that emerge as significant while preparing the MPIS, through environmental studies, public comments or otherwise, should be considered and addressed.

Environmental Issues:

1. Avian fauna
2. Non-avian fauna
3. Flora, vegetation communities and reserved areas
4. Aquatic natural values
5. Noise and vibration emissions
6. Air emissions
7. Shadow flicker
8. Geoconservation
9. Peat soils
10. Surface water quality
11. Hydrogeology and groundwater quality
12. Waste management
13. Dangerous goods and environmentally hazardous materials
14. Environmental impacts of traffic
15. Greenhouse gas emissions, ozone depleting substances, and climate change
16. Rehabilitation
17. Decommissioning
18. Fire risk
19. Socio-economic issues
20. Cumulative and interactive impacts

Key Environmental Issues:

- Avian fauna
- Non-avian fauna
- Flora, vegetation communities and reserved areas

- Aquatic natural values
- Noise and vibration emissions
- Geoconservation
- Surface water quality
- Hydrogeology and groundwater quality

For Issues 1-4, the following should be provided:

- a) Information about the identification of:
 - a. Native aquatic and terrestrial flora and vegetation communities including survey data and historical records.
 - b. Terrestrial, avian, and aquatic fauna including survey data and historical records.
- b) Details of surveys undertaken, including survey effort, timing, and an assessment of the adequacy of the surveys.
- c) Details of the qualifications of the person who undertook the surveys and evidence that the surveys have been undertaken in accordance with applicable guidelines (see below).
- d) Information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the Major Project.
- e) A map (or maps) of existing vegetation and type, threatened fauna species and their foraging, roosting and/or nesting habitat, threatened flora species, and threatened native vegetation communities recorded in the on-ground surveys, overlain with the development footprint.
- f) Impacts on species and habitats, with particular reference to rare and threatened species, migratory species and habitats, including aquatic fauna.
- g) Details of how biosecurity risks will be avoided, minimised, or mitigated for all stages of the Major Project, including consideration of areas within the Major Project site where works should be avoided, vectors for weeds, and diseases such as frog chytrid fungus, wombat mange, and *Phytophthora cinnamomi*.
- h) Details of any direct or indirect loss, disturbance and/or degradation of listed or other native species as a result of the construction and operational stages of the Major Project. Consideration should also be given to potentially impacted areas offsite and downstream of the Major Project site that may impact native species and/or their habitat within those locations.
- i) Key legislative and policy requirements:
 - a. TSP Act, NC Act, and associated regulations.
 - b. Surveys should refer to relevant survey guidelines, including an assessment of the adequacy and appropriateness of the surveys with respect to the guidelines. All surveys should comply with the requirements of the [Tasmanian Guidelines for Natural Values Assessments](#) (Terrestrial, and Marine and Estuarine, as applicable).
 - c. Impacts to the nests, dens, and/or burrows of native fauna species, including species listed under the TSP Act and non-threatened fauna species (i.e., Tasmanian wombat,

platypus, and rakali), are listed under the NC Act as products of wildlife and require a permit to take.

- d. Proposals to offset adverse residual environmental impacts that are unavoidable, despite the adoption of best practice environmental management avoidance and mitigation measures, should be informed by the [Tasmanian Guidelines for Natural Values Surveys](#) (Terrestrial, and Marine and Estuarine, as applicable) and other relevant guidelines including the [Tasmanian Offset Guidelines for Impacts to Threatened Eagles from Wind Farm Developments](#), and the [Survey Guidelines and Management Advice for Development Proposals that may Impact on the Tasmanian Devil](#).

For Issues I-20, the following should be provided:

- a) Information about quarries, batching plants, and any other ancillary extractive activities that are proposed within the Major Project Site and the potential environmental impacts of these activities on Issues I-20 in this guidance. Identify measures to avoid and mitigate any potential adverse impacts. Assess the likely overall environmental impacts after implementation of the proposed avoidance and mitigation measures.
- b) Details regarding how the environmental impacts of ancillary extractive activities will be managed in accordance with the [Quarry Code of Practice 3rd Edition \(2017\)](#).

I. Avian fauna – the following information should be addressed:

- I.1. Discuss potential impacts of construction and operation of the Major Project and any associated infrastructure on native avian fauna, with particular reference to threatened species, including those listed under the relevant Schedules of the TSP Act, including:
 - I.1.1. Information about the identification of threatened and other avian fauna including survey data and historical records. Details of surveys undertaken, including survey effort, timing, and an assessment of the adequacy of the surveys. It is requested that all survey data be submitted to the Natural Values Atlas within 90 days of the survey results being finalised.
 - I.1.2. Information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the Major Project site.
 - I.1.3. Impacts on species and habitats, including consideration of:
 - I.1.3.1. Collision risk, habitat removal, and disturbance from movement, noise, or light pollution;
 - I.1.3.2. Cumulative impact with the Granville Harbour Wind Farm and future transmission infrastructure required for the Major Project; and
 - I.1.3.3. Analysis of significance of such impacts.
 - I.1.4. In regard to consideration of light pollution:
 - I.1.4.1. Detail regarding proposed lighting infrastructure, lighting regimes, positioning and lighting type during different Major Project stages;
 - I.1.4.2. Consideration of proximity to identified nests and breeding habitat;
 - I.1.4.3. Having regard to the [National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds \(2023\)](#).
 - I.1.5. How impacts will be avoided and minimised through the Major Project design and construction methodology (as relevant), including consideration of the outcomes of the surveys required for Issue I.
 - I.1.6. Where impacts cannot be avoided, proposed measures to mitigate and/or offset adverse impacts on biodiversity and nature conservation values, including consideration of effectiveness, should be discussed having regard to the [Tasmanian Guidelines for Natural Values Surveys – Terrestrial Development Proposals](#) and the [Tasmanian Offset Guidelines for Impacts to Threatened Eagles from Wind Farm Developments](#).
- I.2. Bird Utilisation Surveys: should be carried out across the Major Project site to determine utilisation of the area by avian fauna species. These surveys should be carried out in the following manner:
 - I.2.1. Surveys should be undertaken in all habitat types present.
 - I.2.2. Surveys should be undertaken by suitably qualified persons.
 - I.2.3. Multiple observers should be used for each survey.

- 1.2.4. A minimum of five-day surveys at the mid-point of each season (summer, autumn, winter and spring), undertaken from dawn to dusk or an appropriately representative 12-hour period depending on the time of year.
 - 1.2.5. Surveys should be representative of the full range of avian species using the Major Project site across the year, noting this is especially important for migratory avian species which will be present, potentially for short periods although for some species longer, from late summer and over autumn, and during spring. Surveys should also be representative of local wind conditions.
 - 1.2.6. Surveys should be undertaken over a minimum period of two years (i.e., over at least two summers, two autumns, two winters and two springs).
 - 1.2.7. 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. The siting of turbines, distribution/transmission lines and other infrastructure should take into account the results of the utilisation surveys in order to avoid or minimise potential impacts.
 - 1.2.8. Post-survey statistical analyses should use appropriate statistical tests and limitations of surveys and the statistical approach should be identified.
- 1.3. Targeted Eagle Utilisation Surveys: impacts of the proposed windfarm are likely to include mortality or injury of avifauna through collision with turbines and transmission lines as well as habitat loss and disturbance. Species of particular concern include the white-bellied sea eagle (*Haliaeetus leucogaster*) (WBSE) and the wedge-tailed eagle (*Aquila audax subsp. fleayi*) (WTE).
- 1.3.1. Targeted utilisation surveys should be carried out across the proposed project footprint to determine utilisation of the area by eagle species. These surveys should be carried out in the manner outlined above for bird utilisation surveys, and should also include:
 - 1.3.1.1. Survey methodology such that spatial use of the site (any favoured areas, any common flight paths etc.) can be determined.
 - 1.3.1.2. Survey coverage sufficient to inform a robust understanding of site utilisation and support the application of collision risk modelling.
 - 1.3.1.3. If turbines are to be located on ridge-tops, the updrafts rising from these same ridges are likely to be extensively used by eagles and the strings of turbines along them could well pose a much higher risk of collision than on less undulating wind farm sites. Therefore, particular attention should be given to ensuring eagle utilisation surveys are representative of the range of conditions and the prevailing conditions.
 - 1.3.1.4. Consideration should be given to incorporating the use of GPS harnessed eagles (adults) to assess flight patterns. The proponent should consult with relevant specialists/researchers to design an appropriately informative study/approach. It should be noted that some eagles in the surrounding area may be GPS tagged by Woolnorth Renewables-UTAS as part of a larger state wide research project.

Some coordination/collaboration in this work is highly recommended to improve air-scape usage information and inform WTG micro-siting and collision risk models.

I.4. A Collision Risk Model (CRM) to support the Major Project should be provided and used in conjunction with other survey and assessment methods, such as bird utilisation surveys, to identify potential impacts to eagle species from the proposed development.

I.4.1. CRM analysis should be based on and include justification against up-to-date scientific literature and understanding, be supported by an appropriate level of site utilisation data, provide a robust assessment of any uncertainties, assumptions or limitations, and provide clear discussion of the outcomes.

I.4.2. It is recommended that the proponent submit a proposal to the EPA outlining how the CRM analysis will be undertaken for feedback prior to finalisation of methodology.

I.5. Eagle nest searches:

I.5.1. In order to adequately understand the potential for eagle usage of the area and the potential impact upon them, nest searches should be undertaken out to 1 km from the boundary of the Major Project site (including all areas to be disturbed as a result of the Major Project). The results should be used to inform development activities and infrastructure layout.

I.5.2. Nest searches should be conducted outside the eagle breeding season (July-January inclusive), in accordance with [FPA Technical Note 1: Eagle nest searching, activity checking and nest management \(2023\)](#), and the [EPA Guide to Eagle Nest Searching and Nest Activity Checks](#). Noting, searches conducted outside of the eagle breeding period will not be able to identify active eagle nests.

I.5.3. Previously recorded eagle nests that are unable to be located during surveys should follow the reporting process in accordance with [FPA Technical Note 1: Eagle nest searching, activity checking and nest management \(2023\)](#), and the [EPA Guide to Eagle Nest Searching and Nest Activity Checks](#).

I.5.4. The MPIS should discuss the potential adverse impacts of the Major Project on eagle nests and measures to avoid, minimise, or mitigate such impacts.

I.5.5. The MPIS should outline how new nests will be detected, reported, and managed post-commissioning. It is recommended that eagle nest searches should be undertaken annually until the Major Project is fully commissioned. Ground-based nest condition assessments may be conducted using UAVs (drones) if they are conducted outside of the breeding season and in accordance with [FPA Technical Note 1: Eagle nest searching, activity checking and nest management \(2023\)](#).

I.5.6. Aerial nest activity/productivity checks must only be conducted by Department of Natural Resources and Environment recognised species specialists, as the nest checks have the potential to cause breeding failure if performed incorrectly.

I.6. Avian Collision Management:

I.6.1. How collisions with wind turbines and associated infrastructure are proposed to be avoided or mitigated should be outlined, and an offset strategy to address any residual

adverse impacts expected over the life of the wind farm should be provided. The offset strategy should be informed by the [Tasmanian Guidelines for Natural Values Surveys – Terrestrial Development Proposals](#) and the [Tasmanian Offset Guidelines for Impacts to Threatened Eagles from Wind Farm Developments](#).

- 1.6.2. If technology based mitigation or avoidance approaches are proposed (i.e., IdentiFlight 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.
- 1.6.3. Other mitigation and avoidance strategies such as the use of black blades on turbines should also be discussed.

1.7. Avian Collision Monitoring:

- 1.7.1. 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 guidance in Part 3 of this document. The MPIS should also outline how the proponent intends to compensate for non-detections (i.e., birds that collide with turbines but are not detected during collision monitoring).

1.8. Avian Carcass Management:

- 1.8.1. Details of how eagle food resources (i.e., carcasses) will be managed across the site to address collision risk (with turbines, infrastructure, and vehicles) should be outlined, with consideration of:
 - 1.8.1.1. Monitoring along roadsides, around turbines and beneath power distribution lines.
 - 1.8.1.2. The potential implications of changes to land use pre-, during, and post-construction, such as changes to recreational hunting activity.

1.9. On-going disturbance:

- 1.9.1. Some of the proposed turbine locations may require the use of existing roads within 1 km (bare earth) line-of-sight of some eagle nests. The MPIS should outline how disturbance to eagles within the breeding season could be avoided in areas where roads pass within 1 km of a turbine.

1.10. Specific guidance for other avian fauna species that are listed under the TSP Act or *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) that may have habitat within the Major Project site and be adversely impacted by the Major Project:

- 1.10.1. The grey goshawk (*Accipiter novaehollandiae*) has previously been recorded from the Major Project site and the Major Project occurs within the core range of the species. Grey goshawks nest in mature wet forest, usually in the vicinity of a watercourse, but can also be observed in open woodland and around urban fringes. The species have large ranges and are predominantly ambush predators, hunting from perches in the forest canopy but can also hunt from low heights. Threats to the species include collisions with infrastructure, particularly powerlines and cables. Surveys for grey

goshawk and its nests should target areas where development is likely to encroach on its habitat (i.e., areas where infrastructure such as cables and road will cross riparian vegetation and waterways).

- I.10.2. The blue-winged parrot (*Neophema chrysostoma*) is listed as Vulnerable under the EPBC Act and is currently being considered for listing under the TSP Act. Blue-winged parrot mortalities caused by turbines have been recorded by operational wind farms in Tasmania. This species has been recorded within the Major Project site and should be included in further surveys. Consideration should be given to potential impacts on blue-winged parrots and mitigation measures to prevent rotor blade strikes to this species.
- I.10.3. The Tasmanian azure kingfisher (*Ceyx azureus subsp. diemenensis*) has previously been recorded in areas near the Major Project site and the Major Project occurs within the core range of this species. The habitat of the azure kingfisher is shady and overhanging forest vegetation along the forested margins of major rivers, usually dominated by wet sclerophyll and mixed forest supporting mainly eucalypt species. This species should be included in further surveys in areas where the development is likely to encroach on its habitat (i.e., areas where infrastructure such as cables and road will cross riparian vegetation and waterways).
- I.10.4. The swift parrot (*Lathamus discolor*) has previously been recorded within the Major Project site with potential habitat for the species (*Eucalyptus ovata* forest and woodland (DOV)) occurring within the site and nearby. Further potential habitat also occurs in surrounding areas (*Eucalyptus brookeriana* wet forest (WBR)). The Major Project site also partially intersects with the western potential breeding range of the species and there is a swift parrot nest record near Rosebery. As such, there is potential for the species to utilise the site for breeding and/or foraging, and they may also fly through the Major Project site while migrating to other areas of the state. While breeding and foraging by swift parrots has not been recorded as often on the west coast of Tasmania compared to the east coast, it still occurs to some extent and the species should not be discounted as the lack of records may be largely due to a lack of survey effort in the vicinity. This species should be included in further surveys and potential impacts on the species should be considered.
- I.10.5. The Tasmanian masked owl (*Tyto novaehollandiae castanops*) has previously been recorded within 5 km of the Major Project site and the Major Project occurs within the core range of this species. This species occurs across the state with fewer records in the west and southwest which may be due to lack of survey effort. Masked owls inhabit a diverse range of forests and woodlands including agricultural and forest mosaics. Nesting occurs in large hollows of living or dead trees. Tree hollows suitable for masked owl breeding are large (i.e., ≥ 15 cm diameter at the entrance), deep and generally spacious enough to provide protection for up to four masked owls. Trees ≥ 100 cm diameter-at-breast-height have a higher probability of containing suitable nesting hollows.

This species should be included in further surveys and areas where the development is likely to encroach on its habitat should be targeted (i.e., areas where infrastructure such as cables and roads will cross forests and woodlands). Masked owls can be very

discreet, and a combination of techniques should be used to minimise the risk of a nest being overlooked. For initial masked owl surveys, two deployments of acoustic recorders are recommended with each deployment lasting at least three weeks. The two deployments need to be in different seasons (e.g. one in spring and one in summer) and the recording schedule needs to run over the entire night to determine presence/absence. The data analysis (i.e., detection of masked owl calls) needs to be undertaken by a trained rater or by reliable software. Detection range of recorder types and variables such as weather, topography, and vegetation must be considered when interpreting and presenting passive acoustic monitoring data.

A survey for masked owl nesting habitat should be undertaken as part of the Major Project natural values surveys in areas of potential habitat. If any potential nest trees are recorded within or near the development footprint, further investigations should be carried out to determine the likely presence of the species, potential impacts on the species, and to inform avoidance and mitigation measures.

- 1.10.6. The orange-bellied parrot (*Neophema chrysogaster*) (OBP) has previously been recorded within 5 km of the Major Project site and the species' known migratory path intersects with the Major Project site. Given the OBP's low population size, low density, cryptic nature, high mobility, and wide distribution during migration, the absence of detection during surveys does not mean the species does not or is unlikely to utilise the habitat or range.

OBPs are known to favour locations, using them repeatedly over several years, then changing locations for several years to exploit new areas, which further complicates interpretation of lack of detections. OBPs are also known to change locations during the non-breeding season, meaning a location not currently in use may be used at another time in the season. Most of the OBP population is not observed in the non-breeding season, meaning there are currently important but unknown locations of occupancy. Further, the area of occupied OBP habitat appears to be expanding in both the breeding and non-breeding range as the population grows, and OBPs are being detected in areas where they have not been seen for some time and in sites where they have not previously been recorded.

Discussion of the OBP's broader biology, ecology, migration patterns, and consideration of potential impacts of the Major Project on this species and associated measures to avoid or minimise adverse impacts, should have regard to the following:

- 1.10.6.1. It is recommended that a wind turbine exclusion zone of a minimum 3 km and preferably 5 km is applied from the coastline for the Major Project. This recommendation is supported by data, including the 70 accurate OBP records from mainland Tasmania verified on Natural Values Atlas (NVA), and would greatly reduce adverse impacts to the OBP population.
- 1.10.6.2. Review of the [National Recovery Plan for the Orange-bellied Parrot](#) for current information on species foraging habitat requirements, known and potential threats to the species recovery, evidence for impact, and risk ratings, and comprehensive review of current literature for the species.

- 1.10.6.3. Review of the intersection between NVA records and TASVEG 4.0 vegetation communities, with a focus on the variety of habitats utilised by OBPs in Tasmania, including Bass Strait Islands.
- 1.10.6.4. Review of current OBP migratory periods, including NVA data from 2021 to 2023 that shows departures of OBPs from Melaleuca occurred between January to April inclusive.
- 1.10.6.5. Detail of the OBP tracking program for the northerly 2023 migration, including tracking program methodology and results.
- 1.10.6.6. The limitations of OBP surveys undertaken, including temporal limitations (e.g., number of survey days, surveys for both northward and southward migration periods, whether surveys captured the hours OBPs are most likely to be active following sunrise and prior to sunset), and visual limitations (e.g., surveys during southward migration are unlikely to yield results due to the fast rate of movement, and the recording of OBPs migrating at night on at least three occasions).
- 1.10.6.7. Flight heights are not known for OBPs and there is currently no available method to reliably collect this information.
- 1.10.6.8. Construction of the Major Project outside of the OBP migration period should be considered to reduce disturbance to the migrating population.

2. Non-avian fauna – the following information should be addressed:

- 2.1. The potential impacts of construction and operation of the project and any associated infrastructure on native non-avian fauna should be discussed, with particular reference to threatened species, including those listed under the relevant Schedules of the TSP Act, including:
 - 2.1.1. Information about the identification of threatened and other non-avian fauna including survey data and historical records. Details of surveys undertaken, including survey effort, timing, and an assessment of the adequacy of the surveys.
 - 2.1.2. Information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the proposed action.
 - 2.1.3. 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.
 - 2.1.4. Impacts on species and habitats, including consideration of:
 - 2.1.4.1. Habitat removal and disturbance from movement, traffic (including road kill), noise, light pollution, pests or diseases;
 - 2.1.4.2. Cumulative impact with the Granville Harbour Wind Farm and future transmission infrastructure required for the Major Project;
 - 2.1.4.3. Analysis of significance of such impacts.
 - 2.1.5. In regard to consideration of light pollution:

- 2.1.5.1. Detail regarding proposed lighting infrastructure, lighting regimes, positioning, and lighting type during different stages of the Major Project should be provided; and
- 2.1.5.2. Having regard to the [National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds \(2023\)](#).
- 2.1.6. How impacts can be avoided and minimised through the Major Project design and construction methodology should be detailed, including provision of biosecurity management plan(s) as relevant.
- 2.1.7. Where impacts cannot be avoided, proposed measures to mitigate and/or offset adverse impacts on biodiversity and nature conservation values should be discussed, including consideration of effectiveness, and having regard to the [Tasmanian Guidelines for Natural Values Surveys – Terrestrial Development Proposals](#).
- 2.2. Specific guidance for Tasmanian devil (*Sarcophilus harrisii*) and spotted-tailed quoll (*Dasyurus maculatus subsp. maculatus*):
 - 2.2.1. 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](#).
 - 2.2.2. 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.
 - 2.2.3. 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.
 - 2.2.4. Monitoring across the Major Project site to understand the use of the environment by devils and quolls should be conducted using cameras set in a grid array in habitat deemed suitable for these species. The array should be set up with 2 km squares and a camera set at the intersection of the grid squares. The array should extend into the less suitable habitat that will be utilised for the turbines to determine the likelihood of this less suitable habitat being traversed by devils or quolls. It may also indicate the likelihood of any active den sites existing in the ecotone between suitable and unsuitable habitat, and whether further surveys are required to determine the significance of impacts and mitigation measures required.
 - 2.2.5. 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](#). Any dens that are proposed to be destroyed will require a permit to take under the NC Act.
 - 2.2.6. In relation to assessing roadkill risk, the MPIS should include a summary (e.g., table) showing what new roads/tracks are proposed, and how much distance they cover. Where possible, fragmenting forests with infrastructure 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.

2.2.7. The MPIS should 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.

2.2.8. If after avoidance and mitigation measures are applied, residual impacts to the species are identified, then an offset proposal should be included in the MPIS. Any offset proposal should be informed by the [Tasmanian Guidelines for Natural Values Surveys – Terrestrial Development Proposals](#) and the [Tasmanian Devils - Devil Survey Guidelines and Management Advice](#).

2.3. Specific guidance for other threatened non-avian fauna species listed in the Schedules of the TSP Act:

2.3.1. Tussock skink (*Pseudemoia pagenstecheri*) has potential range within the Major Project site and surveys are recommended for the species in areas where the proposed development is likely to impact on the habitat of the species (i.e., tussock grassland and grassy open woodland).

2.4. Specific guidance for native bat species recorded within the Major Project site:

2.4.1. Further surveys should be undertaken to determine the presence of native bat species at proposed turbine locations within the Major Project site. Bat species utilising the area are all high-flying species which may be adversely impacted by mortality or injury through collision with turbines. Where possible, mitigation measures to avoid or minimise the risk of collision for bat species should be provided.

3. Flora and vegetation communities – the following information should be addressed:

3.1. The potential impacts of construction and operation of the Major Project and any associated infrastructure on native flora species and vegetation communities should be discussed, with particular reference to conservation of significant flora and those listed under relevant Schedules of the TSP Act and NC Act, including:

3.1.1. Surveys for threatened flora and vegetation communities in the vicinity of the Major Project should be undertaken and the results provided in the MPIS, including historical data, details of survey effort, timing, and an assessment of the adequacy of the surveys. Surveys should be undertaken with consideration of seasonal visibility of species and should be representative of each vegetation type from across the Major Project site to determine the presence of species. Any new records of threatened flora recorded during surveys should be submitted to the Natural Values Atlas (NVA) within 90 days following surveys.

3.1.2. Targeted surveys for threatened flora should focus on species known to occur within the Major Project site (outlined in point 3.2. below), suitable habitat for threatened flora species known to occur within 5 km of the Major Project site, unusual geologies in the area (e.g., ultramafic, basalt), and vegetation types that have a high likelihood of containing threatened flora species (e.g., coastal heath/scrub, dry eucalypt forests, and *Eucalyptus ovata* forest). Where threatened flora populations are recorded in the Major

Project land, extension surveys should be conducted in surrounding areas to provide context for impact assessments.

- 3.1.3. Information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the proposed action.
- 3.1.4. An assessment of the likelihood of presence of any locally known threatened plant species to be present within the Major Project site, estimates of abundance of likely impacted individuals, and estimate of abundance of the local subpopulation.
- 3.1.5. Information on conservation significant flora in the vicinity of the Major Project site that are not currently listed under the TSP Act, including uncommon species that only occur in few locations which have not been previously listed due to the low likelihood of threats. Such species may warrant listing under the TSP Act if they are significantly impacted by the Major Project. Consideration should also be given to the presence of new or previously unrecorded flora species which may warrant listing under the TSP Act.
- 3.1.6. Extensive on-ground surveys to determine the vegetation mapping accuracy of threatened native vegetation communities listed under the NC Act within the Major Project site. Noting, only approximately 0.8% of the vegetation mapping within the Major Project site has been field validated. Survey data should be collected and mapped following the recommended TASVEG data structure.
- 3.1.7. Impacts on species, communities, and habitats, including consideration of:
 - 3.1.7.1. Clearing of vegetation and habitat;
 - 3.1.7.2. Fragmentation and edge effects, including consideration of vegetation communities more vulnerable to disturbance such as rainforest vegetation and uncommon communities with high paleoendemic significance such as *Lagrostrobos franklinii* rainforest and scrub;
 - 3.1.7.3. The potential for migration and/or introduction of pests, weeds and plant diseases as a result of the Major Project;
 - 3.1.7.4. Cumulative impact with the Granville Harbour Wind Farm and future transmission infrastructure required for the Major Project; and
 - 3.1.7.5. Analysis of significance of such impacts.
- 3.1.8. How impacts will be avoided and minimised through the Major Project design and construction methodology, including provision of biosecurity management plan(s) as relevant.
- 3.1.9. Where impacts cannot be avoided, proposed measures to mitigate and/or offset adverse impacts on biodiversity and nature conservation values should be discussed, including consideration of effectiveness, and having regard to the [Tasmanian Guidelines for Natural Values Surveys – Terrestrial Development Proposals](#).
- 3.1.10. Rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity, including any proposed seed collection and progressive rehabilitation program.

3.2. Specific guidance for targeted surveys for threatened flora species listed in the Schedules of the TSP Act:

- 3.2.1. Northwest heath (*Epacris curtisiae*) is listed as Rare under the TSP Act, and the Major Project site contains numerous records of this species. Information on the distribution and abundance of this species is limited. It is recommended that targeted surveys for this species are undertaken during spring (August – October) when it is flowering and more conspicuous. Potential adverse impacts to this species includes construction of road infrastructure that may increase pathways for *Phytophthora* incursion. It is recommended that construction activities are avoided in areas known to be free of *Phytophthora* that are known to contain *Phytophthora* susceptible species.
- 3.2.2. Horned orchid (*Orthoceras strictum*) is listed as Rare under the TSP Act, and the Major Project site is a habitat stronghold for this species. This species has been flagged for reassessment and uplisting due to increasing threats and requires special consideration. The species occurs in a wide range of habitat types including buttongrass moorland, and sedgy and scrubby heathland. It is recommended that targeted surveys for this species are undertaken in summer (December – February) and should be conducted by orchid specialists. Surveys should be undertaken over successive years in suitable habitat to account for dormancy and fluctuations in populations.
- 3.2.3. Leafless milkwort (*Comesperma defoliatum*) is listed as Rare under the TSP Act, and several known populations of this species are within the Major Project site. Habitat for this species includes wet heathland/sedgeland, buttongrass moorland, and coastal scrub. Targeted surveys should be timed to coincide with peak flowering which is in summer (January – February), and the species is more likely to be detected after fire.

4. Aquatic natural values – the following information should be addressed:

- 4.1. The potential impacts of construction and operation of the Major Project and any associated infrastructure on freshwater aquatic natural values should be discussed, with particular reference to those listed under relevant Schedules of the TSP Act, including:
- 4.1.1. Aquatic natural values surveys in the vicinity of the Major Project should be undertaken and the results provided in the MPIS, including historical data, details of survey effort, timing, and an assessment of the adequacy of the surveys. The surveys should identify potential habitat for any aquatic species listed in the Schedules of the TSP Act including striped marsh frog (*Limnodynastes peroni*), green and gold frog (*Litoria raniformis*), and four freshwater snail species. Any new records of threatened species recorded during surveys should be submitted to the Natural Values Atlas (NVA) within 90 days following surveys.
- 4.1.2. Information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the proposed action.
- 4.1.3. Impacts on aquatic values, including consideration of:
- 4.1.3.1. Habitat disturbance, waterway crossings, dams, or relocation;
 - 4.1.3.2. Flow alterations and changes to drainage patterns around peatlands, wetlands, creeks and drainage lines;
 - 4.1.3.3. Erosion;

- 4.1.3.4. Mobilised sediment or pollutants, including potential acid sulfate soils;
- 4.1.3.5. Potential for migration and/or introduction of pests, weeds and plant and animal diseases as a result of the Major Project;
- 4.1.3.6. Cumulative impact with the Granville Harbour Wind Farm and future transmission infrastructure required for the Major Project; and
- 4.1.3.7. Analysis of significance of such impacts.
- 4.1.4. How impacts will be avoided and minimised through the Major Project design and construction methodology, including provision of biosecurity management plan(s) as relevant.
- 4.1.5. Where impacts cannot be avoided, proposed measures to mitigate and/or offset adverse impacts on biodiversity and nature conservation values should be discussed, including consideration of effectiveness, and having regard to the [Tasmanian Guidelines for Natural Values Surveys](#) (Terrestrial, and Marine and Estuarine, as applicable).
- 4.1.6. Rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity.
- 4.2. Specific guidance for threatened aquatic fauna species listed in the Schedules of the TSP Act:
 - 4.2.1. Striped marsh frog (*Limnodynastes peroni*) has potential range within the Major Project site and surveys are recommended for this species where the development is likely to encroach on its habitat (i.e., areas where infrastructure such as cables and road will cross waterways). The species is predominantly found in wetlands and lagoons with permanent freshwater and abundant aquatic vegetation, with breeding occurring during spring and summer.
 - 4.2.2. Green and gold frog (*Litoria raniformis*) has the potential to occur within the Major Project site and should be surveyed for concurrently with the striped marsh frog surveys. Green and gold frog occurs predominantly in the northeast and southeast of the state, with limited scattered records in the northwest near Temma. The species breeds in permanent freshwater lagoons and slow-moving waterways, generally with emergent vegetation, during spring and summer.
 - 4.2.3. Four freshwater snail species, Zeehan freshwater snail (*Beddomeia zeehanensis*), Little Henty River hydrobiid snail (*Phrantela conica*), Heazlewood River hydrobiid snail (*Phrantela marginata*), and Bowry Creek hydrobiid snail (*Beddomeia bowryensis*) have the potential to occur within the Major Project site and should be surveyed for in areas where development is likely to encroach on their habitat. The construction of roads, culverts, and cabling across waterways could have adverse impacts on populations of one or more the species through siltation and changes to flow regimes, even if only for a short period.
 - 4.2.4. Australian grayling (*Prototroctes maraena*) may be present in one or more of the streams within the Major Project site. Australian grayling migrate between the marine and freshwater environment, so are only seasonally present in freshwater. Migration upstream is prevented by barriers such as some bridges, weirs, and waterfalls. While the species is unlikely to occupy headwater streams, cumulative impacts of sedimentation may affect the species downstream. It is recommended that mitigation

measures to minimise instream sedimentation are implemented where roads are proposed to cross streams, and installation of culverts should not prevent fish passage or result in hanging culverts on the downstream end. If these mitigation measures are implemented for construction of the Major Project, no surveys for this species are recommended.

5. Noise and vibration emissions – the following information should be addressed:

- 5.1. Discuss the potential for noise and vibration emissions from construction and operation of the Major Project to result in environmental nuisance or environmental harm to sensitive receptors, including:
 - 5.1.1. Identification, location, and description of potential sources of noise (including associated sound power levels and 1/3 octave data to assess for low frequency and tonal noise);
 - 5.1.2. Identification, location, and description of potential sources of vibration;
 - 5.1.3. Identification and location of sensitive receptors in the vicinity of the Major Project;
 - 5.1.4. Establishing the existing background noise level in the area with particular focus on sensitive receptors likely to be impacted by the Major Project;
 - 5.1.5. Proposing appropriate noise level criteria for the construction phase of the Major Project;
 - 5.1.6. Proposing appropriate vibration level criteria for the construction and operational phases of the Major Project;
 - 5.1.7. Predicting noise and vibration emission levels at sensitive receptors for the construction phase of the Major Project;
 - 5.1.8. Predicting operational noise levels (noise modelling is required, including contour maps), considering potential background noise creep, and cumulative impact with the Granville Harbour Wind Farm, and identify areas where:
 - 5.1.8.1. The levels exceed the proposed appropriate criteria (i.e., the EPA Board's Policy of 35 dB(A), or background + 5 dB(A), whichever is greater); and/or
 - 5.1.8.2. The predicted levels exceed the existing background noise levels.
 - 5.1.9. Having regard to the following as relevant:
 - 5.1.9.1. *AS 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites*;
 - 5.1.9.2. *The NZS 6808:2010 Acoustics – wind farm noise*;
 - 5.1.9.3. *The [Tasmania Noise Measurement Procedures Manual](#)*;
 - 5.1.9.4. *Part 5 of the [Tasmanian Environment Protection Policy \(Noise\) 2009](#)*;
 - 5.1.9.5. *[Quarry Code of Practice 3rd Edition \(2017\)](#)*;
 - 5.1.9.6. The EPA Board's Policy on noise limits for wind energy projects is the 35 dB(A) criterion, or background + 5 dB(A), whichever is greater, at sensitive receptors and/or land zoned for sensitive uses; and

5.1.9.7. Specification from the Tasmanian Department of Health and the National Health and Medical Research Council that significant health effects from wind turbines are unlikely beyond 1500 metres from a wind farm (refer to Attachment I of this guidance).

5.1.10. How impacts can be avoided and minimised through the Major Project design;

5.1.11. Discussion of proposed construction noise management and mitigation measures, including management of noise complaints and options for noise and vibration monitoring, if required; and

5.1.12. Discussion of proposed operational noise monitoring, and operational management and mitigation strategies.

6. Air emissions – the following information should be addressed:

6.1. Assessment of air quality in the vicinity of the proposed construction site prior to the commencement of construction activities. Particular attention should be given to assessment of existing air quality at the location of sensitive receptors which have the potential to be impacted by emissions from nearby sources during construction.

6.2. Air emission constituents of concern during the construction phase, including the following details:

6.2.1. Location of the land boundary and nearest sensitive receptors;

6.2.2. Sources of air emissions and their names and locations;

6.2.3. For each source – constituents of emissions that may arise from proposed activities, including but not limited to:

6.2.3.1. Dust from construction phase activities including land clearing, excavation work, stockpiles, vehicle movements, concrete batch plants, quarrying activities, and loading, unloading and transporting material;

6.2.3.2. Engine exhaust from construction equipment, vehicles, and generators; and

6.2.3.3. Any potential odour.

6.3. Assessment of construction phase emissions regarding the likelihood of causing environmental nuisance or environmental harm should be undertaken, including:

6.3.1. Assessment of the potential impacts of atmospheric emissions from the Major Project on nearby sensitive receptors and the impact on the local environment considering meteorology, terrain, and land use.

6.3.2. Application of appropriate dust control management and mitigation measures described in section 7.5 of the [Quarry Code of Practice 3rd Edition \(2017\)](#) (where applicable);

6.3.3. 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 and to inform the implementation of appropriate mitigation measures; and

6.3.4. Compliance with the requirements of the relevant National Environment Protection Standards (NEPM), the [Tasmanian Environment Protection Policy \(Air Quality\) 2004](#) and any supplementary documents including the [EPA Board Update to Air Pollutant Design Criteria used in the EIA Process \(2022\)](#).

6.4. Development and discussion of appropriate management and mitigation strategies, if required, to mitigate the impact of any atmospheric emissions from the site that have the potential to cause environmental nuisance or environmental harm at or beyond the Major Project site boundary.

7. Shadow flicker – the following information should be addressed:

7.1. Assessment of the potential for intermittent shading of the sun by the blades of turbines to cause environmental nuisance or environmental harm to sensitive receptors, including:

7.1.1. Siting of turbines and consideration of turbine parameters (i.e., height and rotor diameter);

7.1.2. Shadow flicker modelling to determine the likelihood of impact to identified sensitive receptors in the vicinity of the Major Project; and

7.1.3. Discussion of proposed management and mitigation strategies, if required.

7.2. Having regard to the following as relevant:

7.2.1. [Australian Energy Infrastructure Commissioner 2022 Annual Report](#);

7.2.2. Appendix 5 of the [Clean Energy Council Best Practice Guidelines for Implementation of Wind Energy Projects in Australia, June 2018](#); and

7.2.3. Attachment I of this guidance.

8. Geoconservation – the following information should be addressed:

8.1. Potential impacts of construction and operation of the Major Project and any associated infrastructure on geoconservation values, including the following:

8.1.1. An assessment of geological values and geodiversity in the vicinity of the Major Project by a suitably qualified person, including:

8.1.1.1. Surveys of the existing environment for geodiversity values and status of geomorphic processes. Field surveys should comply with the requirements outlined in Appendix I of the [Tasmanian Guidelines for Natural Values Surveys – Terrestrial Development Proposals](#);

8.1.1.2. A map of known sites of geoconservation significance or natural processes, including sites of geoconservation significance listed on the Tasmanian Geoconservation Database;

8.1.1.3. The scale, existing condition, and sensitivity of any site of geoconservation significance and of geodiversity values;

8.1.1.4. Potential impacts of construction and operation of the Major Project on geodiversity values, including identifying where disturbance to existing geomorphic processes (i.e., erosion, sedimentation, slope stability, soil) may arise from physical works;

8.1.1.5. Investigating and determining the lithologies of rock units and suitability of strata in relation to the proposed location for the construction of footings, including consideration of geochemical composition and Potential Acid Forming (PAF) mineralisation.

8.1.2. How potential impacts will be avoided and minimised through the Major Project design and construction methodology, based on analysis and advice from suitably qualified persons.

8.1.3. Where impacts cannot be avoided, proposed measures to mitigate impacts and protect geodiversity values should be discussed, including consideration of effectiveness, and having regard to the [Tasmanian Guidelines for Natural Values Surveys – Terrestrial Development Proposals](#).

8.1.4. Provide an unanticipated discovery plan for significant geodiversity elements (i.e., fossils, bedrock structures, rare mineral species) that may be exposed by physical works, based on analysis and advice from suitably qualified persons.

8.1.5. Rehabilitation of disturbed areas following the completion of construction activities and decommissioning of the Major Project, with consideration of the potential for restoration or enhancement of natural values.

9. Peat soils – the following information should be addressed:

9.1. Assessment of the potential impacts of construction and operation of the Major Project on blanket bog peatland soil systems should be discussed, including the following:

9.1.1. Mapping the historical and existing extent of Western Tasmanian Blanket Bogs within the Major Project site and identification of areas that may be impacted by construction and operation of the Major Project, both directly and indirectly.

9.1.2. Assessing the existing condition and sensitivity to disturbance of identified areas of blanket bog peatland.

9.1.3. Potential impacts of construction and operation of the Major Project and any associated infrastructure on the condition and integrity of blanket bog peatland soil systems, including identifying where works have the potential to alter peatland hydrology and therefore ecological function and viability (including carbon storage and sequestration).

9.1.4. How potential impacts will be avoided and minimised through the Major Project design and construction methodology including management controls, based on analysis and advice from suitably qualified persons.

9.1.5. Where impacts cannot be avoided, proposed measures to mitigate and/or offset adverse impacts on blanket bog peatland soil systems including surface water management, erosion control, and stabilisation of exposed subsoils.

9.1.6. Rehabilitation of disturbed areas following the completion of construction activities and decommissioning of the Major Project, with consideration of the potential for restoration or enhancement of natural values.

10. Surface water quality – the following information should be addressed:

- 10.1. The potential impacts of the Major Project on surface water quality, including the release of sediment and other pollutants or the disturbance of potential acid sulfate soils (PASS), during construction or any sediment scouring and deposition changes post-construction should be discussed, including the following:
- 10.1.1. 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 Major Project during construction and operation, and determine the community values of those water bodies, relevant water quality guidelines values for the protection of those values, and potential impacts to water quality as a result of the Major Project having regard to the following:
- 10.1.1.1. Reference to the [Environmental Management Goals for Tasmanian Surface Waters Catchments Circular Head and Waratah/Wynyard Municipal Areas](#), [Environmental Management Goals for Tasmanian Surface Water Catchments West Coast Municipal Area](#), the Tasmanian Conservation of Freshwater Ecosystem Values database, any conservation listings, or survey of community uses should be provided in determining receiving water community values.
- 10.1.1.2. For receiving water bodies that may be impacted by the Major Project, water quality guideline values for the protection of identified community values should be determined. As a minimum, relevant default guidelines values published by the Environment Protection Authority Tasmania, and ANZG 2018 toxicant guideline values should be referred to. Site specific information including any historical water quality data and site-specific monitoring should be used where ongoing impacts are possible.
- 10.1.1.3. Assess the potential water quality impacts to identified receiving environments in relation to the selected water quality guideline values as a result of the release of contaminants entrained in stormwater, disturbance of acid sulfate soils, or the discharge of any other pollutants during construction and operation of the Major Project.
- 10.1.1.4. Where merited, monitoring programs should be developed to determine baseline, ecosystem condition, water quality and potential water quality impacts.
- 10.1.1.5. Discuss how impacts will be avoided and minimised through the Major Project design and construction methodology.
- 10.1.1.6. 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 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.
- 10.1.2. Provide an initial 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 \(austieca.com.au\)](http://Publications - International Erosion Control Association (austieca.com.au))). As a minimum the plan should include:

- 10.1.2.1. Classification of erosion potential for each land type and topography likely to be disturbed by construction activities. Activities may include roads, turbine pads, laydown areas and other works yards.
- 10.1.2.2. 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.
- 10.1.2.3. 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.
- 10.1.2.4. 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. Where merited, 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.
- 10.1.2.5. Details of any measures incorporated into erosion and sediment control plans to mitigate impacts to blanket bog peat land, including direct impacts from physical works and indirect impacts from hydrological changes.

11. Hydrogeology and groundwater quality – the following information should be addressed:

- 11.1. The impacts of the Major Project on hydrogeology and groundwater quality should be discussed, including the release of sediment and other pollutants during construction, including the following:
 - 11.1.1. A conceptual groundwater model for the Major Project site indicating local and regional aquifer flows and how construction footprints and any proposed groundwater extraction or dewatering may interact with existing hydrogeology.
 - 11.1.2. Identification of existing groundwater extraction bores nearest to the area impacted by the Major Project (refer to the [Groundwater Information Access Portal](#)).
 - 11.1.3. Identification of any surface water and groundwater dependant ecosystems that may receive groundwater from areas impacted by the Major Project.
 - 11.1.4. Details of any baseline groundwater quality monitoring undertaken.
 - 11.1.5. For any groundwater extraction that may be proposed, provide the required yield, volumes, and process for bore establishment and management.
 - 11.1.6. Justification for any proposed emission of contaminants to surface waters should be in accordance with the principles under the *State Policy on Water Quality Management 1997* and with reference to likely groundwater community values, associated

guideline values, and guideline values for receiving surface waters. 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](#).

- 11.1.7. If necessary, mitigation should be proposed for potential impact to receiving environments from changed groundwater quality or flow. NB: controls to prevent migration of contaminants to groundwater at any storage locations for potentially contaminating materials should be detailed in relation to the management of those facilities.

12. Waste management – the following information should be addressed:

- 12.1. The potential for the Major Project to result in waste materials and proposed methods for avoiding and minimising the generation of waste materials and appropriate measures to store, reuse, and dispose waste should be discussed, including the following:
 - 12.1.1. Identification of the source, nature, and quantities of all wastes, (liquid, atmospheric or solid) likely to be generated, including general refuse, treated wastewater, decommissioned infrastructure, and by-products from the various stages of construction, operation and decommissioning of the Major Project.
 - 12.1.2. Identification of any potential Controlled Waste as defined in EMPCA and associated regulations. Provide a description of the source, nature, quantity, and method of treatment, storage, and disposal for each potential Controlled Waste generated by the Major Project. Describe collection or other maintenance requirements where relevant.
 - 12.1.3. Identification of whether PASS may be present and potentially disturbed as a result of construction of the Major Project including as a minimum, a desktop assessment of the potential for disturbance of acid sulfate soils which addresses the following:
 - 12.1.3.1. Soil profiles including test pit and bore log data;
 - 12.1.3.2. Geology, hydrogeology, and geomorphology;
 - 12.1.3.3. Detail of proposed construction methodology and any associated dewatering;
 - 12.1.3.4. The development footprint, depth and volume of structure footings, and extent of disturbance;
 - 12.1.3.5. The time period over which sub surface materials are likely to be exposed;
 - 12.1.3.6. Any groundwater extraction and associated drawdown;
 - 12.1.3.7. Initial geochemical testing in areas where PASS may be disturbed; and
 - 12.1.3.8. Having regard to the [Tasmanian Acid Sulfate Soil Management Guidelines](#).
 - 12.1.4. Identification of any Potential Acid Forming (PAF) mineralisation that may be intersected by structure footings or other subsurface works. If such minerals are to be disturbed by the Major Project, provide a PAF materials management plan which addresses the following:
 - 12.1.4.1. Geochemical characterisation of PAF mineralogy to determine the likelihood for potential acid and metalliferous drainage (AMD);

- 12.1.4.2. Separation and containment measures for PAF rock, including identification of temporary stockpiling and handling areas and drainage design details;
- 12.1.4.3. Measures to mitigate the formation of potential AMD;
- 12.1.4.4. Areas of PAF rock disposal or use, including details of measures to ensure the potential for the future formation of AMD is mitigated; and
- 12.1.4.5. Surface and/or groundwater monitoring plans in relation to potential contaminants of concern where the potential for release of AMD is identified.
- 12.1.5. Methods and facilities proposed to collect, store, reuse, treat, or dispose of each general waste stream should be identified. Describe collection or other maintenance requirements where relevant.
- 12.1.6. Demonstrate that waste management measures proposed are in accordance with 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.

13. Dangerous goods and environmentally hazardous materials – the following information should be addressed:

- 13.1. The impacts of the Major Project in relation to dangerous goods and environmentally hazardous materials (i.e., any substance or mixture of substances of a specific 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) should be discussed, including:
 - 13.1.1. The nature, quantity, and storage location of all environmentally hazardous materials including Dangerous Goods (as defined in the [Australian Code for the Transport of Dangerous Goods by Road and Rail](#)) that will be used during the construction and operation of the Major Project.
 - 13.1.2. A map showing the location of temporary and permanent storage areas for fuels, oils, and other dangerous goods or chemicals.
 - 13.1.3. Detail measures to be adopted to prevent or control any accidental releases of dangerous goods and environmentally hazardous materials. Examples include employee/contractor education, standard operating procedures, suitably designed and secure storage areas, bunding or spill trays, suitable spill kits and where relevant, appropriate disposal arrangements.
 - 13.1.4. 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.
 - 13.1.5. Identification of any safety management requirements for the protection of human health and safety affecting the community.

14. Environmental impacts of traffic – the following information should be addressed:

14.1. Assessment of the potential for impacts of traffic from construction and operation of the Major Project to result in environmental nuisance or environmental harm, including:

- 14.1.1. Identification of traffic routes for the Major Project during construction and operational stages, including the estimated volume, nature, and timing of traffic, and details of the current use of proposed routes. Consideration should be given to roads within the Major Project site and indirect impacts on public roads.
- 14.1.2. Discussion of the potential environmental impacts of altered traffic flows generated by the Major Project on nearby sensitive receptors, native fauna species, other road users, and residences located adjacent to roads.
- 14.1.3. A roadkill assessment should be conducted on all pre-existing access roads to understand the current levels of road kill as a baseline. Assessment involves driving the road at a minimum of once per week (preferably every day), stopping at each roadkill carcass, making a note of the date, time, species, sex, and easting and northing of the location. This information should also be reported to the [Tasmanian Roadkill Reporter app](#). Once a carcass has been recorded, it should be removed from the road to avoid double-counting. Roadkill monitoring should be undertaken across three months as a minimum in winter and in summer to account for periods of increased/decreased activity.
- 14.1.4. Proposed measures to avoid and minimise identified impacts. Where impacts cannot be avoided, proposed measures to mitigate and/or offset residual adverse impacts should be detailed.

15. Greenhouse gas emissions, ozone depleting substances, and climate change – the following information should be addressed:

- 15.1. A discussion of the direct and indirect effects of the Major Project, including construction, on greenhouse gas production and ozone-depleting substances, as well as any associated benefits of the Major Project, including:
 - 15.1.1. An inventory of projected scope 1, scope 2, scope 3, and total greenhouse gas emissions, energy production, and energy consumption for a year of operation. Describe the methods used to develop the inventory. Discuss potential annual variation that may occur. NB: Information on categorising and calculating emissions is available at the [Australian Government Clean Energy Regulator website](#).
 - 15.1.2. Estimation of total greenhouse gas emissions, energy production, and energy consumption of the Major Project, including both construction and operational stages and emissions associated with vegetation removal (as relevant). Include details of the methodology used.
 - 15.1.3. Demonstration that the Major Project will use cost-effective, best practice measures to achieve ongoing minimisation of greenhouse gas emissions and ozone depleting substances, including the sourcing and disposal of materials.
 - 15.1.4. 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.

- 15.1.5. Consideration of the evolving national response to climate change and greenhouse gas emissions and the target set in the *Climate Change (State Action) Act 2008 (Tas)*, [Tasmania's Climate Change Action Plan 2023-25](#), and the *Climate Change Act 2022 (Cth)*.
- 15.1.6. Potential impacts of climate change on the Major Project. For example, it may be appropriate to plan for more intense storm events, severe fire weather, and/or long-term sea level rise.

16. Rehabilitation – the following information should be addressed:

- 16.1. A discussion of proposed measures for rehabilitation of areas disturbed during construction of the Major Project, including:
 - 16.1.1. A map showing areas to be disturbed during construction, in relation to natural values, waterways, sensitive receptors, and other constraints;
 - 16.1.2. Discussion of staging of construction, measures to minimise disturbance during construction, and potential for progressive rehabilitation;
 - 16.1.3. Discussion of appropriate measures for rehabilitation, including proposed use of materials and plantings, with prioritisation of native species and enhancement of natural values. Consideration should also be given to any requirements for the rehabilitation of specific vegetation types that may be adversely impacted by the Major Project; and
 - 16.1.4. Provision of a conceptual progressive rehabilitation plan, including consideration of ongoing maintenance requirements.

17. Decommissioning – the following information should be addressed:

- 17.1. A conceptual Decommissioning and Rehabilitation Plan should be provided for the Major Project, including:
 - 17.1.1. Potential scenarios for end-of-life of the Major Project, including forecast project lifespan and potential future use of the Major Project site;
 - 17.1.2. Proposed staging and methodology for decommissioning of equipment and infrastructure within the Major Project site, with potential for re-use elsewhere; and
 - 17.1.3. Proposed methodology for rehabilitating the Major Project site for appropriate future re-use, with consideration of the potential for restoration or enhancement of natural values.

18. Fire risk – the following information should be addressed:

- 18.1. A discussion of the potential fire risk associated with the Major Project, including the following:
 - 18.1.1. Consideration of fire within the Major Project site, fire escaping from the site, and the impact of wildfire originating outside the development, and the environmental impacts that could result from such events;
 - 18.1.2. Potential impacts from the siting of Major Project fire-sensitive infrastructure inhibiting or limiting the feasibility for implementing fuel reduction or ecological/cultural burning on reserved land, including within the Major Project site and surrounding areas;

- 18.1.3. The objectives and management principles to be adopted to prevent and respond to potential fire events; and
- 18.1.4. Where a fire response plan is appropriate, it should be fully integrated with other relevant documents, such as a Tasmanian 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.

19. Socio-economic impacts – the following information should be addressed:

- 19.1. Assessment of the potential social and economic impacts that may result from the Major Project, with a specific focus on those that may cause environmental nuisance or environmental harm and/or adverse impacts to human and ecosystem health, including:
 - 19.1.1. Discussion of each of the potential social and economic impacts of the Major Project and whether they are likely to be significant; and
 - 19.1.2. Describe the measures to be implemented to avoid, minimise, or mitigate potential adverse social and economic impacts and how these impacts will be monitored and reported.

20. Cumulative and interactive impacts – the following information should be addressed:

- 20.1. Assessment of potential cumulative and interactive impacts of the Major Project, with consideration of all relevant environmental issues specified in this guidance and any associated developments such as transmission infrastructure, including:
 - 20.1.1. Identification of potential incremental adverse effects from all stages of the Major Project, including during construction and operational stages;
 - 20.1.2. Consideration of past, present, and reasonably foreseeable future changes and/or developments within both the local and wider region and what this means for the Major Project;
 - 20.1.3. Discussion of the cumulative and interactive nature of the identified effects of those developments and of the Major Project and whether any potential impacts are likely to be significant; and
 - 20.1.4. 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.

Part 3: Avian mortality monitoring plan guidance

1. Introduction, include:
 - 1.1. Brief project description and site location;
 - 1.2. Site layout plan;
 - 1.3. Information about the proponent, including the person responsible.
2. Objectives of the plan.
3. Survey methodology, a structured and statistically designed survey program:
 - 3.1. Assuming searches by human observers or dogs:
 - 3.1.1. The search methodology, to be informed by the results of scavenging and detectability trials, should include:
 - 3.1.1.1. The turbine area to be searched (i.e., distance from the base of turbine);
 - 3.1.1.2. Spacing of circular transects (i.e., at what distance from the turbine base will each transect occur);
 - 3.1.1.3. The number and location of turbines to be searched;
 - 3.1.1.4. The frequency of searches (including frequency of each individual turbine);
 - 3.1.1.5. The search strategy (i.e., whether the same search strategy will be suitable for all turbines based on terrain and surrounding vegetation);
 - 3.1.1.6. How searches are undertaken (i.e., by car/foot/dog/all-terrain vehicle), and how many observers.
 - 3.1.2. Management of searched areas (i.e., is vegetation clearance required to allow detections);
 - 3.1.3. Commencement date of surveys;
 - 3.1.4. Survey duration;
 - 3.1.5. Inclusion of met masts search methodology, if present;
 - 3.1.6. 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;
 - 3.1.7. Fatigue management plan;
 - 3.1.8. Who will conduct the searches (i.e., if informal searches will form part of the monitoring program how will the personnel be trained).
 - 3.2. If the monitoring program is supplemented by an alternative monitoring method such as an automated option (e.g., remote sensing, radar, or imaging) full details of the monitoring strategy should be provided, including:
 - 3.2.1. Commencement date of surveys;
 - 3.2.2. Comparative benefit of the method relative to using human observers or dogs;
 - 3.2.3. Survey duration.
4. Incidental dead or injured bird and bat reporting, including actions taken.

5. Reporting Requirements:
 - 5.1. Detail the notification requirements to the Director, EPA of any evidence of dead or injured native birds or bats (verbal and written);
 - 5.2. Provide a commitment to provide all results of the monitoring in an annual environmental report to the Director, EPA;
 - 5.3. Reports of any dead or injured threatened species should be reported to the Department of Natural Resources and Environment Tasmania.
6. Review of the mortality monitoring plan and adaptive management.

**Attachment I: Advice provided by Public Health Services, Department of Health
Tasmania in relation to the Major Project in accordance with section 74(5) of EMPCA**