



Assessment Requirement Notice altered by Alteration Notice

Issued under the *Land Use Planning and Approvals Act 1993*

I, Dr Martin Read, Acting Director, Environment Protection Authority, acting in accordance with section 60ZA(1)(b) and 60ZL(4) of the *Land Use Planning and Approvals Act 1993* (LUPAA), for the reasons specified in this notice, require that the Development Assessment Panel (the Panel) to include the matters specified in this notice in the assessment criteria to be determined under section 60ZM of LUPAA for the North East Wind Major Project (the Major Project).

General Reasons for Requirements

I have considered the Major Project proposal referred to the Director by the Tasmanian Planning Commission by letter dated 18 August 2022, the draft assessment criteria advertised by the Panel on 26 June 2023, and the representations referred to the EPA Board by the Panel on 12 July 2023. The EPA Board's assessment criteria requirements as outlined below, and the guidance provided in Schedules 1 and 2 of this notice, address matters that will be relevant to the EPA Board's assessment of the Major Project under the *Environmental Management and Pollution Control Act 1994* (EMPC Act), and subsequent decision regarding the content of final advice that will be given under section 60ZZF(1) of LUPAA in regard to the Major Project. In addition, the guidance in Schedules 1 and 2 of this notice are provided in accordance with section 60ZC(6) of LUPAA and section 74(4) of the EMPC Act, and set out the information base that the environmental impact assessment of the Major Project must establish under section 74(9) of the EMPC Act in order for the EPA Board to undertake its assessment.

Matters to be included in Assessment Criteria

1. Avian fauna - potential impacts of the Major Project on native avian fauna, particularly those listed under the *Tasmanian Threatened Species Protection Act 1995* (TSP Act), must be avoided, minimised and mitigated and, if necessary, offset, such that the environment is protected and environmental degradation prevented.

*Reason for Matter 1: There is a likelihood of a number of threatened and non-threatened native avian fauna species and their habitat residing within or within 1 km of the boundary of the Project Land, including (but not limited to) the Wedge-tailed Eagle ((*Aquila audax subsp. fleayi*) and White-bellied Sea-eagle (*Haliaeetus leucogaster*), and migratory and resident shorebird and/or waterbird species such as the Eastern Curlew (*Numenius madagascariensis*), Fairy Tern (*Sternula nereis subsp. nereis*), Short-tailed Shearwater (*Ardenna tenuirostris*), Great Crested Grebe (*Podiceps cristatus*) and Black-browed Albatross (*Thalassarche melanophris*), indicating the potential for impact of the project on these species.*

2. Non-avian fauna – potential impacts of the Major Project on native non-avian fauna, particularly those listed under the TSP Act, must be avoided, minimised and mitigated and, if necessary, offset, such that the environment is protected, and environmental degradation prevented.

Reason for Matter 2: The location of the Major Project coincides with potential habitat of native non-avian fauna, including threatened species, indicating the potential for impact on these species.

3. Flora, vegetation communities and reserved areas – potential impacts of the Major Project on native flora and vegetation communities, particularly those listed under the TSP Act and the Nature Conservation Act 2002 (NC Act), and areas reserved under the NC Act, must be avoided, minimised and mitigated and, if necessary, offset, such that the environment is protected and environmental degradation prevented.

Reason for Matter 3: There are a number of threatened native vegetation communities listed under the NCA which may occur within the Project Land, including Melaleuca ericifolia swamp forest, Riparian Scrub, Wetlands and Allocasuarina littoralis forest, indicating the potential for impact of the project on these communities. The Project Land also appears to include or be in close proximity to reserves including Boobyalla Conservation Area, Waterhouse Conservation Area and Cameron Regional Reserve. There is also the potential for threatened native flora to be present and impacted.

4. Aquatic natural values – potential impacts of the Major Project on aquatic natural values must be avoided, minimised and mitigated and, if necessary, offset, such that the environment is protected and environmental degradation prevented.

Reason for Matter 4: The location of the Major Project includes waterways and wetlands, indicating the potential for impact on aquatic flora, fauna and riparian areas.

5. Marine and coastal natural values - potential impacts of the Major Project on marine and coastal natural values must be avoided, minimised and mitigated and, if necessary, offset, such that the environment is protected and environmental degradation prevented.

Reason for Matter 5: The Major Project includes coastal and offshore works and structures, indicating the potential for impact on natural values in these areas.

6. Noise and vibration emissions – Noise and vibration emissions resulting from both construction and operation of the Major Project must be minimised and managed such that they do not cause adverse impact to human health or unreasonable loss of amenity to sensitive receptors.

Reason: Noise and vibration emissions from both construction and operation have the potential to cause environmental nuisance or harm for sensitive receptors.

7. Air emissions – Emissions to air resulting from construction and operation of the Major Project, including dust, vehicle emissions and odour, must be minimised and managed such that they do not cause adverse impact to human health or unreasonable loss of amenity to sensitive receptors.

Reason: Air emissions generated during the construction of the Project have the potential to cause environmental nuisance or harm for sensitive receptors.

8. Geoconservation – Potential impacts of the Major Project on geoconservation values must be avoided, minimised and mitigated and, if necessary, offset, such that the environment is protected and environmental degradation prevented.

Reason: The Major Project footprint intersects sites of recognised geodiversity value and has potential to impact the following three geoconservation sites: Northeast Tasmania Pleistocene Aeolian System (NVA geosite 2873), Deflation Basins of Eastern Tasmania in Good Condition (NVA geosite 3186), Waterhouse Dunefield (NVA geosite 2163). In addition, the Ainslie Dune is also known to have significant geodiversity values.

9. Potential acid sulfate soils – Disturbance of potential acid sulfate soils from construction of the Major Project must be avoided, minimised and managed such that the environment is protected, and environmental degradation prevented.

Reason: The Major Project footprint intersects with and is close to several areas mapped as having a high probability of Acid Sulfate Soil occurrence. Disturbance of potential acid sulfate soils may result in release of acid and metals, which may degrade water quality, affect karst systems, harm humans and harm or kill flora and fauna.

10. Surface and coastal water quality – Potential impacts of the Major Project on surface water quality, including release of sediment and other pollutants during construction or any sediment scouring and deposition changes post-construction, must be avoided, minimised and mitigated such that the environment is protected, and environmental degradation prevented.

Reason: Changes to water quality as a result of the release of sediment and other pollutants to receiving surface waters can cause environmental nuisance or environmental harm through degradation of water quality, ecotoxic impacts, and changes to sediment mobilisation and deposition. The State Policy on Water Quality Management 1997 sets out principles in relation to the management of pollution discharges to surface waters, focusing on protecting identified environmental values through the maintenance and improvement of water quality.

11. Hydrogeology and groundwater quality – Potential impacts of the Major Project on groundwater quality, including hydrogeological changes and the release of sediment or other pollutants during construction, must be avoided, minimised and mitigated such that the environment is protected, and environmental degradation prevented.

Reason: Changes to groundwater quality or flows have the potential to impact on groundwater beneficial uses including groundwater dependent ecosystems and surface water ecosystems receiving groundwater. The State Policy on Water Quality Management 1997 sets out principles for the maintenance of groundwater quality in relation to potential beneficial uses of groundwater aquifers.

12. Waste management – Waste material produced as a result of the Major Project must be minimised and managed such that it minimises the use of raw resources and does not cause environmental nuisance or harm.

Reason: Use of raw resources may result in environmental harm in the extraction of those resources, and inappropriate management, storage and disposal of waste material may result in pollution of land or water.

13. Dangerous goods and environmentally hazardous materials – Dangerous goods or environmentally hazardous materials used or produced as a result of the Major Project must be minimised and managed such that they do not cause environmental nuisance or harm.

Reason: Inappropriate management, storage and disposal of dangerous goods and environmentally hazardous materials may result in pollution of land or water and impacts to human health.

14. Greenhouse gas emissions – Emission of greenhouse gases as a result of construction or operation of the Major Project, including production of major components used in the Major Project, must be minimised, mitigated and, if necessary, offset, such that the environment is protected, and environmental degradation prevented.

Reason: Construction of the Major Project, including production of materials, may result in emission of greenhouse gases which result in pollution of air and increased climate change.

15. Rehabilitation – areas disturbed during construction of the Major Project must be rehabilitated as soon as those areas are no longer required for construction or operation of the Major Project, such that the environment is protected, and environmental degradation prevented.

Reason: Unrehabilitated disturbed areas may result in dust emissions to air or sediment emissions to water, invasion of weed species, or loss of natural values.

16. Decommissioning – The Major Project must include plans for decommissioning of wind turbines and the Project land to ensure stabilisation of surfaces and rehabilitation of vegetation and natural values, such that the environment is protected, and environmental degradation prevented.

Reason: Future use of the land needs to be considered in planning the project, including disposal or reuse of materials. Unrehabilitated disturbed areas may result in dust emissions to air or sediment emissions to water, invasion of weed species, or loss of natural values.

17. Shadow flicker – The intermittent shading of the sun by the blades of turbines must be minimised and managed such that it does not cause adverse impact to or detrimentally affect human health or cause unreasonable loss of amenity to sensitive receptors.

Reason: The Major Project footprint intersects with, and is close to, sensitive receptors including but not limited to, the community of Tomahawk. The intermittent shading of the sun by the blades of turbines during operation has the potential to cause environmental nuisance to sensitive receptors.



Signed:

Dr Martin Read

ACTING DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date: 24 July 2023

Schedule I: General Guidance from the EPA for the Major Project Impact Statement (MPIS) in addressing potential impacts of the project to be assessed under the EMPC Act

The following matters should be considered in the MPIS with regard to the following:

- a) furthering the Objectives at Schedule I of the EMPC Act;
- b) implementation of best practice environmental management as defined in the EMPC Act;
- c) all aspects of the Major Project, including other Level 2 activities;
- d) the Guidance provided under Schedules 1, 2 and 3 of this Notice.

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. However, sufficient technical detail should be provided to enable an appropriate level of assessment.

Existing conditions

Outline the existing conditions relevant to the impact.

Performance requirements

The environmental performance requirements to be achieved 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

The potential environmental, social and economic impacts of the Major Project (positive and negative) through all stages, including construction, commissioning, operation and closure, in the absence of special control measures should be outlined. Any foreseeable variations in impacts during the start-up and operational phases should be identified and an analysis of the significance of the relevant impacts included.

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

The evaluation of potential impacts should identify plausible worst case scenario consequences, the vulnerability of the affected environment to the potential impacts, and the reversibility of the impacts. Potential cumulative impacts of this Major Project in light of other activities 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 (for existing operations this should include the results of monitoring of current emissions). The methodologies used or relied on should be referenced, together with the relevant research and investigations supporting them. Assumptions, simplifications and scientific judgements should be stated clearly, and the nature and magnitude of uncertainties should be clearly defined. Where relevant, the choice of a particular methodology over alternative methodologies should be explained. Where impacts are not quantifiable, they should be adequately described.

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

Avoidance and mitigation measures

Describe the measures proposed to avoid or mitigate potential adverse impacts (having regard to best practice environmental management as defined in the EMPC Act) in order to achieve the environmental performance requirements (such as through pollution control technology or management practices). The extent to which they may overcome the anticipated impacts should be specified. 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 project phases (construction, commission, operation, decommission) separately.

Assessment of residual impacts

An assessment of the overall impacts of the development 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, comparison with current environmental conditions (for existing activities) and with State, national and international regulations, and standards. 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, including impacts on other uses, particularly sensitive uses.

Offsetting unavoidable adverse impacts

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

Conclusion

An overall conclusion as to the environmental acceptability of the proposal should be provided, including discussion of compliance with the principles of Ecologically Sustainable Development and the objectives and requirements of the EMPC Act.

Schedule 2: Specific Guidance on information to be provided in the MPIS in addressing the matters identified in this Notice

For matters 1-5, 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 proposed action.
- e) A map (or maps) of existing vegetation and type, threatened species and threatened native vegetation communities, 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 any direct or indirect loss, disturbance and/or degradation of listed or other native species as a result of the construction and operational phases.
- h) Key legislative and policy requirements:
 - a. TSP Act, NC Act and associated regulations.
 - b. The *Australia's Biodiversity Conservation Strategy 2010-2030*, the draft *Tasmania's Nature Conservation Strategy* and the *Threatened Species Strategy for Tasmania*.
 - c. Surveys should refer to relevant survey guidelines, including an assessment of the adequacy and appropriateness of the surveys with respect to these guidelines. These include *Tasmanian Guidelines for Natural Values Assessments* (Terrestrial and Marine and Estuarine as applicable - <https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments>).
 - 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 - <https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments>) and other relevant guidelines including the *Tasmanian Offset Guidelines for Impacts to Threatened Eagles from Wind Farm Developments* (<https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/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* (<https://nre.tas.gov.au/Documents/Devil%20Survey%20Guidelines%20and%20Advice.pdf>).

For matters 1-16, the following should be provided:

- a) Information about the on-site quarries, batching plants and other ancillary extractive activities that are proposed and the potential environmental impacts of these activities on matters 1-16.
- b) Details regarding how the environmental impacts of these ancillary extractive activities will be managed in accordance with the [*Quarry Code of Practice*](#).

It is noted that advice provided by Mineral Resources Tasmania indicates that any areas where extraction of material is intended and falls outside the definition of S7 of the *Mineral Resources Development Act 1995*, will require the proponent to apply for a mining lease. The project area is within the North East Strategic Prospectivity Zone, which is defined under the *Mining (Strategic Prospectivity Zones) Act 1993* (SPZ Act) and should therefore be considered with regard to the SPZ Act.

For matter 17, the following should be provided:

An assessment of the potential for intermittent shading of the sun by the blades of turbines (i.e., shadow flicker) to cause environmental nuisance to sensitive receptors, informed by the *Australian Energy Infrastructure Commissioner, 2022 Annual Report* (<https://www.aeic.gov.au/sites/default/files/documents/2023-06/aeic-2022-annual-report.pdf>) and Appendix 5 of the *Clean Energy Council Best Practice Guidelines for Implementation of Wind Energy Projects in Australia, June 2018* (<https://assets.cleanenergycouncil.org.au/documents/advocacy-initiatives/community-engagement/wind-best-practice-implementation-guidelines.pdf>).

I. Avian fauna - the following information and matters should be addressed for Matter I:

- I.1. Discuss potential impacts of construction and operation of the 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 proposed action.
 - 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 Musselroe Wind Farm and necessary transmission infrastructure resulting from the 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 project stages;
 - I.1.4.2. consideration of proximity to avian fauna breeding grounds;
 - I.1.4.3. consideration of the potential for short-tailed shearwater (*Ardenna tenuirostris*) collisions; and
 - I.1.4.4. have regard to *National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds* (Commonwealth of Australia 2000 - <https://www.environment.gov.au/biodiversity/publications/national-light-pollution-guidelines-wildlife>).
 - 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 Matter 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* (<https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments>) and the *Tasmanian Offset Guidelines for Impacts to Threatened Eagles from Wind Farm Developments* (<https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/offset-guidelines-for-impacts-to-threatened-eagles-from-wind-farm-developments>).

- I.2. Bird Utilisation Surveys: should be carried out across the proposed project footprint to determine utilisation of the area by avian fauna species. These surveys should be carried out in the following manner:
 - I.2.1. Surveys should be undertaken by suitably qualified persons.
 - I.2.2. Multiple observers should be used for each survey.
 - I.2.3. Five-day surveys are recommended 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.
 - I.2.4. Surveys should be undertaken over a minimum period of one year.
- I.3. Targeted surveys for nocturnally active avian fauna: Targeted surveys should be undertaken to understand the movements of nocturnally active avian fauna including the Short-tailed Shearwater (*Ardenna tenuirostris*), Common Diving-Petrel (*Pelecanoides urinatrix*) and White-faced Storm Petrel (*Pelagodroma marina*). Surveys should be designed to maximise detectability. For example, surveys for the Short-tailed Shearwater (*Ardenna tenuirostris*) should be undertaken during the species breeding season (September-April inclusive) when this species is present at nearby colonies, noting that they are most likely to fly low over the coastal areas after dusk/before dawn.
- I.4. 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).
 - I.4.1. 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:
 - I.4.1.1. Two years of surveys (i.e., over at least two summers, two autumns, two winters and two springs) since utilisation by WTE has been known to vary significantly between years.
 - I.4.1.2. Survey methodology such that spatial use of the site (any favoured areas, any common flight paths, etc.) can be determined.
 - I.4.1.3. Survey data presented in a manner that is representative of the 3-dimensional nature of movement patterns (e.g., contour maps) for different seasonal activity periods and overlain with the proposed infrastructure locations for context. The siting of turbines, distribution/transmission lines and other infrastructure should take into account the results of the utilisation surveys in order to avoid or minimise potential impacts.
 - I.4.1.4. Survey coverage sufficient to inform a robust understanding of site utilisation and support the application of collision risk modelling.
 - I.4.1.5. 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.

- 1.4.1.6. 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 may be possible.
- 1.5. 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.
 - 1.5.1. 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.
 - 1.5.2. 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.
- 1.6. Eagle nest searches
 - 1.6.1. 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 proposed turbines. The results should be used to inform development activities and infrastructure layout.
 - 1.6.2. Nest searches should be conducted outside the eagle breeding season (July-January inclusive), in accordance with the FPA Technical Note 1 (available at: www.fpa.tas.gov.au/_data/assets/pdf_file/0012/110208/Fauna_Tech_Note_1_Eagle_nest_management_May_2015.pdf), including any updates to Technical Note 1 by the FPA, and the EPA Guide to Eagle Nest Searching and Activity Checks (available at: <https://epa.tas.gov.au/Documents/EPA%20Guide%20to%20Eagle%20Nest%20Searching%20and%20Nest%20Activity%20Checks.pdf>).
 - 1.6.3. The MPIS should outline how new nests will be detected, reported, and managed post-commissioning.
- 1.7. Collision Management
 - 1.7.1. 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 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* (<https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments>) and the *Tasmanian Offset Guidelines for Impacts to Threatened Eagles from Wind Farm Developments*

(<https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/offset-guidelines-for-impacts-to-threatened-eagles-from-wind-farm-developments>). If technology based mitigation or avoidance approaches are proposed, then an assessment of their effectiveness at the site should be presented. It is recommended that this is informed by results from their use at existing wind farms, particularly in the Tasmanian context.

1.8. Collision Monitoring

- 1.8.1. 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 guidelines in Schedule 3 for guidance. 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).

1.9. Carcass Management

- 1.9.1. Details of how eagle food resources (e.g., carcasses) will be managed across the site to address collision risk (with turbines, infrastructure, and vehicles) should be outlined, with consideration of:

- 1.9.1.1. Monitoring along roadsides, around turbines and beneath power distribution lines.
- 1.9.1.2. The potential implications of changes to land use pre-, during and post-construction, such as changes to farming practices.

1.10. On-going disturbance

- 1.10.1. Some of the proposed turbine locations may require the use of existing roads within 1km (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 1km of a turbine.

2. Non-avian fauna - the following information and matters should be addressed for Matter 2:

- 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* ('the Guidelines' see: <http://dpipwe.tas.gov.au/Documents/Guidelines%20for%20Natural%20Values%20Surveys%20related%20to%20Development%20Proposals.pdf>) 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. interaction between the Major Project and farming activities, and how this may further affect native fauna;
 - 2.1.4.3. cumulative impact with the Musselroe Wind Farm and necessary transmission infrastructure resulting from the project; and
 - 2.1.4.4. 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 project stages should be provided; and
 - 2.1.5.2. regard should be had to the *National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds* (Commonwealth of Australia 2000 - <https://www.environment.gov.au/biodiversity/publications/national-light-pollution-guidelines-wildlife>).
- 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* (<https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments>).
- 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* ([http://www.nre.tas.gov.au/Documents/Devil Survey Guidelines and Advice.pdf](http://www.nre.tas.gov.au/Documents/Devil%20Survey%20Guidelines%20and%20Advice.pdf)).
 - 2.2.2. In the absence of specific guidelines for the Spotted-tailed Quoll, the Devil survey guidelines 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. Suitable denning habitat should be mapped in relation to the position of proposed infrastructure to assist in determining a site layout that minimises impacts on devils and quolls. Once the final layout has been determined, den surveys should be conducted prior to construction in accordance with the Devil guidelines. Any dens that are proposed to be destroyed will require a permit to take under the NC Act.

- 2.2.5. 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. 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.
 - 2.2.6. The MPIS should include an assessment of the potential for roadkill during both construction and operational phases and provide mitigation measures that will address this risk. Identification of high-risk roadkill areas may help to inform mitigation and offset considerations for the Tasmanian devil and spotted-tailed quoll.
 - 2.2.7. 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* (<https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments>) and the *Tasmanian Devils - Devil Survey Guidelines and Management Advice* ([http://www.nre.tas.gov.au/Documents/Devil Survey Guidelines and Advice.pdf](http://www.nre.tas.gov.au/Documents/Devil_Survey_Guidelines_and_Advice.pdf)).
- 2.3. Specific guidance for other threatened non-avian fauna species listed in the Schedules of the TSP Act:
- 2.3.1. Surveys should identify potential New Holland Mouse (*Pseudomys novaehollandiae*) habitat on site. It is recommended that the survey results are provided to relevant specialists/researchers to assist with design an appropriately informative study/approach.
 - 2.3.2. Schayers Grasshopper (*Schayera baiulus*) has previously been recorded in the area and recently rediscovered near the site. Surveys are recommended in October through November and in coastal grassland/sedgeland.
 - 2.3.3. New observations of Salt Lake Slater (*Haloniscus searlei*) and Chaostola Skipper (*Antipodia chaostola subsp. leucophaea*) have been recorded in the northeast of Tasmania near the site. Surveys are recommended for both species including within saline lagoons and saline saltmarshes in mid-spring to summer when Salt Lake Slater (*Haloniscus searlei*) are most abundant and in areas of dry forest and woodland supporting *Gahnia* spp.). Surveys for Chaostola Skipper (*Antipodia chaostola subsp. leucophaea*) can be conducted at any time of year, as this species can be detected by the larval/pupal shelters.

3. Flora and vegetation communities - the following information and matters should be addressed for Matter 3:

- 3.1. The potential impacts of construction and operation of the project and any associated infrastructure on native flora species and vegetation communities should be discussed, with particular reference to 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 proposed 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. 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. Information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the proposed action.
- 3.1.3. An assessment of the likelihood of presence of any locally known threatened plant species to be present within the Major Project land, estimates of abundance of likely impacted individuals, and estimate of abundance of the local subpopulation.
- 3.1.4. Impacts on species, communities, and habitats, including consideration of:
 - 3.1.4.1. clearing of vegetation and habitat;
 - 3.1.4.2. edge effects;
 - 3.1.4.3. the potential for migration and/or introduction of pests, weeds and plant diseases as a result of the Major Project;
 - 3.1.4.4. cumulative impact with the Musselroe Wind Farm and necessary transmission infrastructure resulting from the project; and
 - 3.1.4.5. analysis of significance of such impacts.
- 3.1.5. How impacts will be avoided and minimised through the Major Project design and construction methodology, including provision of biosecurity management plan(s) as relevant.
- 3.1.6. 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* (<https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments>).
- 3.1.7. Rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity, including any proposed seed collection and progressive rehabilitation program.

4. Aquatic natural values - the following information and matters should be addressed for Matter 4:

- 4.1. The potential impacts of construction and operation of the 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 proposed 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 Green and Gold Frog (*Litoria raniformis*) and Eastern Dwarf Galaxias (*Galaxiella pusilla*). 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. Identify areas or habitats of conservation significance, including designated conservation areas, areas relating to the requirements of international treaties (e.g., Japan-Australia and China-Australia Migratory Bird Agreements (JAMBA/CAMBA) and Ramsar (wetlands) Convention).
- 4.1.4. Impacts on aquatic values, including consideration of:
 - 4.1.4.1. habitat disturbance, waterway crossings, dams or relocation;
 - 4.1.4.2. flow alterations and changes to drainage patterns around wetlands, creeks and drainage lines;
 - 4.1.4.3. erosion;
 - 4.1.4.4. mobilised sediment or pollutants, including PASS;
 - 4.1.4.5. potential for migration and/or introduction of pests, weeds and plant and animal diseases as a result of the Major Project;
 - 4.1.4.6. cumulative impact with the Musselroe Wind Farm and necessary transmission infrastructure resulting from the project; and
 - 4.1.4.7. analysis of significance of such impacts.
- 4.1.5. How impacts will be avoided and minimised through the Major Project design and construction methodology, including provision of biosecurity management plan(s) as relevant.
- 4.1.6. 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 *Tasmanian Guidelines for Natural Values Surveys* (Terrestrial and Marine and Estuarine as applicable - <https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments>).
- 4.1.7. Rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity.

5. Marine and coastal natural values - the following information and matters should be addressed for Matter 5:

- 5.1. Potential impacts of construction and operation of the project and any associated infrastructure on marine and coastal natural values should be discussed, with particular reference to coastal features, habitats and marine and coastal flora and fauna species listed under relevant Schedules of the TSP Act and NC Act, including:
 - 5.1.1. Marine and coastal natural values surveys in the vicinity of the proposed 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. Any new records of threatened species recorded during surveys should be submitted to the Natural Values Atlas (NVA) within 90 days following surveys.
 - 5.1.2. Information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the proposed action.

- 5.1.3. Identify areas or habitats of conservation significance, including designated conservation areas, areas relating to the requirements of international treaties (e.g., Japan-Australia and China-Australia Migratory Bird Agreements (JAMBA/CAMBA) and Ramsar (wetlands) Convention).
- 5.1.4. A comprehensive hydrological study of the coastal zone should be undertaken to assess potential impacts of the proposed wharf construction to the geomorphology of the coast and marine environment within the Project Land.
- 5.1.5. Impacts on marine or coastal natural values, including consideration of:
 - 5.1.5.1. habitat clearance or disturbance;
 - 5.1.5.2. disturbance during works and operation, including vessel movement and potential collision risk, noise – particularly loud or percussive activities such as pile driving or blasting, and light pollution;
 - 5.1.5.3. introduction of pests or diseases;
 - 5.1.5.4. permanent structures, including from potential scouring or deposition;
 - 5.1.5.5. potential impact of mobilised sediment or pollutants, including PASS;
 - 5.1.5.6. potential for migration and/or introduction of pests, weeds and plant and animal diseases as a result of the Major Project;
 - 5.1.5.7. cumulative impact with the Musselroe Wind Farm and necessary transmission infrastructure resulting from the project; and
 - 5.1.5.8. analysis of significance of such impacts.
- 5.1.6. In regard to consideration of light pollution:
 - 5.1.6.1. detail regarding proposed lighting infrastructure, lighting regimes, positioning, and lighting type during different project stages should be provided; and
 - 5.1.6.2. regard should be had to the *National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds* (Commonwealth of Australia 2000 - <https://www.environment.gov.au/biodiversity/publications/national-light-pollution-guidelines-wildlife>).
- 5.1.7. How impacts will be avoided and minimised through the Major Project design and construction methodology, including provision of biosecurity management plan(s) as relevant.
- 5.1.8. 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 *Guidelines for Natural Values Surveys – Estuarine and Marine Development Proposals* (<https://nre.tas.gov.au/Documents/Guidelines%20for%20Marine%20and%20Estuarine%20Natural%20Values%20Surveys%20related%20to%20Development%20Proposals.pdf>)
- 5.1.9. Rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity.

6. Noise and vibration emissions - the following information and matters should be addressed for Matter 6:

- 6.1. The potential for noise and vibration emissions from construction and operation of the project to result in environmental nuisance or harm on sensitive receptors should be discussed, including:
 - 6.1.1. identification of significant potential sources of noise and vibrations emissions;
 - 6.1.2. identification of noise-sensitive receptors in the vicinity of the project;
 - 6.1.3. establishing the baseline (pre-existing) noise in the area with particular focus on sensitive receptors likely to be influenced by the project;
 - 6.1.4. establishing noise and vibration level criteria for the construction and operational phases of the project;
 - 6.1.5. predicting construction noise and vibration at noise sensitive uses/receptors, with consideration of cumulative impact with construction of necessary transmission infrastructure resulting from the project;
 - 6.1.6. predicting operational noise levels, with consideration of cumulative impact with the Musselroe Wind Farm, and identify areas where:
 - 6.1.6.1. the levels exceed the established criteria; and/or
 - 6.1.6.2. the predicted levels exceed the baseline noise levels.
 - 6.1.7. having regard to the following as relevant:
 - 6.1.7.1. *AS 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites*;
 - 6.1.7.2. the *NZS 6808:2010 Acoustics – wind farm noise*;
 - 6.1.7.3. the *Tasmania Noise Measurement Procedures Manual*;
 - 6.1.7.4. Part 5 of the *Tasmanian Environment Protection Policy (Noise) 2009*;
 - 6.1.7.5. the EPA Board's policy that the noise limit of 35 dB(A) or background + 5 dB(A) at residences or land zoned for sensitive uses should apply to new wind energy projects (see https://epa.tas.gov.au/Documents/EPA%20Board%20Communique_August%202020.pdf).
 - 6.1.8. how impacts can be avoided and minimised through the Major Project design;
 - 6.1.9. discussion of proposed construction noise management and mitigation measures, including management of noise complaints and options for noise and vibration monitoring, if required; and
 - 6.1.10. discussion of proposed operational noise monitoring, and operational phase management and mitigation strategies, if required.

7. Air emissions - the following information and matters should be addressed for Matter 7:

- 7.1. An assessment of air quality in the vicinity of the proposed construction site prior to the commencement of construction activities should be provided. Particular attention should be

given to assessment of existing air quality at the location of sensitive receptors having the potential to be impacted by emissions from nearby activities during construction.

7.2. Air emission constituents of concern and sensitive receptors during construction phase should be identified, including the following details:

7.2.1. location of the land boundary and nearest sensitive receptors;

7.2.2. sources of air emissions and their names and locations;

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

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

7.2.3.2. engine exhaust from construction equipment, vehicles, and generators; and

7.2.3.3. odour from wastes.

7.3. Assessment of construction phase emissions with respect to the likelihood of causing environmental nuisance or environmental harm should be undertaken, including:

7.3.1. assessment of the potential impacts of atmospheric emissions from the proposed activity on nearby sensitive receptors and the impact on the local environment taking into consideration meteorology, terrain and land use.

7.3.2. where a potential for impact on sensitive receptors is identified, the deployment of suitably located dust deposition monitors is recommended to determine the extent of the impact and to inform the implementation of appropriate mitigation measures.

7.3.3. with consideration of the Tasmanian *Environment Protection Policy (Air Quality) 2004*.

7.4. Appropriate management and mitigation strategies should be developed and discussed, if required, to mitigate the impact of any atmospheric emissions from the site that have the potential to cause environmental nuisance or harm at or beyond the site boundary.

8. Geoconservation - the following information and matters should be addressed for Matter 8:

8.1. Potential impacts of construction and operation of the Major Project and any associated infrastructure on sites of geoconservation significance should be discussed, 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. Specifying and mapping known sites of geoconservation significance or natural processes (such as fluvial or coastal features), including sites of geoconservation significance listed on the Tasmanian Geoconservation Database.

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

8.1.1.3. Potential impacts of construction and operation of the Major Project on geodiversity values, including identifying where construction has the potential to reactivate currently stable dune systems.

8.1.1.4. 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 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 and/or offset adverse impacts on geodiversity values should be discussed, including consideration of effectiveness, and having regard to the *Tasmanian Guidelines for Natural Values Surveys – Terrestrial Development Proposals* (<https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments>).

8.1.4. Rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity.

9. Potential acid sulfate soils - the following information and matters should be addressed for Matter 9:

9.1. Identification and management of potential acid sulfate soils which may be disturbed during construction of the Major Project and any associated infrastructure, in order to avoid environmental nuisance or harm should be discussed, including the following:

9.1.1. An analysis as to whether Potential Acid Sulfate Soils (PASS) may be present and potentially disturbed as a result of construction of the proposal, including as a minimum a desktop assessment of the potential for disturbance of acid sulphate soils taking into consideration; soil profiles including test pit and bore log data; geology, hydrogeology and geomorphology; detail of proposed construction methodology, footprint, the depth and volume of structure footings, and the extent of disturbance; construction methods and any associated dewatering; the time period over which sub surface materials are likely to be exposed; any groundwater extraction proposed and associated drawdown; and initial geochemical testing in areas where PASS may be disturbed.

9.1.2. Analysis of receptors and risk to receptors due to disturbing PASS, during and after construction (e.g., from scouring of sediment due to altered flow patterns).

9.1.3. Potential consequences of disturbance (i.e., potential impact/risks), and evaluation of their significance, including consideration of water quality, natural values, and karst systems.

9.1.4. Proposed management and mitigation measures for minimising impacts of potential acid sulfate soils during construction and long-term use/operation, including storage, monitoring and disposal as relevant, and the following:

9.1.4.1. An initial acid sulfate soil management plan consistent with the Commonwealth ASS Guidelines (<https://www.waterquality.gov.au/issues/acid-sulfate-soils>) and the Tasmanian ASS Management Guidelines (<https://nre.tas.gov.au/agriculture/land-management-and-soils/soil-management/acid-sulfate-soils>).

- 9.1.4.2. The sequencing of geotechnical and geochemical testing prior to disturbance and how results are used to make decisions regarding construction management and PASS impact mitigation.
- 9.1.4.3. The potential volumes of acid sulfate soil that may require management.
- 9.1.4.4. The management of excavated spoil which may contain potential acid sulfate soils.
- 9.1.4.5. The management of intersected groundwater and groundwater ingress and associated groundwater drawdown where acid sulfate soils may be present.
- 9.1.4.6. Where treatment of excavated PASS is proposed at specialised facility for the purpose, detail potential locations, the size of the facility, pad design, and treated water management and discharge criteria.
- 9.1.4.7. Detail disposal options for excavated and treated PASS and ASS including any significant onsite or off-site disposal location and the disposal method.

10. Surface water quality - the following information and matters should be addressed for Matter 10:

- 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 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* (ANZG2018), surface water bodies that may potentially be impacted by the proposed activity during construction and operation should be determined as well as 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 proposal.

- 10.1.1.1. In determining receiving water community values, reference to the Environmental Management Goals for Tasmanian Surface Waters, Dorset & Break O'Day Municipal Areas, November 2005, The Tasmanian Conservation of Freshwater Ecosystem Values database, wetlands listed under the Ramsar convention and any other conservation listings, or survey of community uses should be provided.

- 10.1.1.2. For receiving water bodies that may be impacted by the activity, water quality guidelines 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 ANZG2018 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. 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 activity should be assessed.

- 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. How impacts will be avoided and minimised through the Major Project design and construction methodology should be discussed.
 - 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 under the SPWQM 1997 and with application of a 'weight of evidence approach' consistent with the ANZG2018. 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, August 2020.
- 10.1.2. An initial erosion and sediment control plan should be provided, detailing the potential for mobilisation of sediment for each significant construction element and/or environmental setting is identified, and mitigation measures detailed in accordance with best practice erosion and sediment control principles (e.g. *Best Practice Erosion and Sediment Control*, IECA 2008 (<https://www.austieca.com.au/publications/best-practice-erosion-and-sediment-control-bpesc-document>)). 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, laydown areas and other works yards, turbine pads and shore based wharf structures.
 - 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.
- 10.2. The following information and matters should be addressed in relation to the construction and operation of the proposed wharf and potential impact to coastal processes and water quality:
- 10.2.1. Details of the design and construction method, focusing on earth works, dredging and sediment disturbance. Details should include construction of roading to the wharf, the land abutment and platform across the shoreline, infilling and piling operations.

- 10.2.2. For the preferred design, modelling of sand and sediment movement along the coastal area which may be impacted is recommended to determine any potential changes to sand and sediment movement, build up and scouring as a result of the wharf structure.
- 10.2.3. Potential impacts to coastal waters, and littoral and benthic habitat quality as a result of hydrodynamic changes, changes to coastal process and any mobilisation of pollutants potentially caused by construction and operation of the wharf should be assessed.
- 10.2.4. How impacts will be avoided and minimised through the Major Project design and construction methodology should be discussed.
- 10.2.5. Where impacts cannot be avoided, proposed measures to mitigate adverse impacts on coastal processes and water quality should be discussed, including consideration of effectiveness.
- 10.2.6. Rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity should be discussed.

11. Hydrogeology and groundwater quality - the following information and matters should be addressed for Matter 11:

- 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 project land should be provided, indicating local and regional aquifer flows and including how construction footprints and any proposed groundwater extraction or dewatering may interact with existing hydrogeology.
 - 11.1.2. Existing groundwater extraction bores nearest to the area impacted by the activity (refer to the Groundwater Information Portal <https://wrt.tas.gov.au/groundwater-info/>) should be identified.
 - 11.1.3. Any surface water and groundwater dependant ecosystems that may receive groundwater from areas impacted by the proposal should be identified.
 - 11.1.4. Details of any baseline groundwater quality monitoring undertaken should be provided.
 - 11.1.5. For any groundwater extraction that may be proposed, required yield and volumes and process for bore establishment and management should be detailed.
 - 11.1.6. Potential impacts to groundwater quality associated with disturbance of PASS should be addressed as part of the required ASS management plan.
 - 11.1.7. 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, August 2020.

- 11.1.8. 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 and matters should be addressed for Matter 12:

- 12.1. The potential for the Major Project to result in waste materials and proposed methods for minimising and managing these materials should be discussed, including the following:
 - 12.1.1. The source, nature, and quantities of all wastes, (liquid, atmospheric or solid) likely to be generated should be identified, including marine wastes or sea debris, 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. Any potential Controlled Waste as defined in the EMPC Act and associated regulations should be identified.
 - 12.1.3. Methods and facilities proposed to collect, store, reuse, treat or dispose of each waste stream should be identified, including maintenance requirements.
 - 12.1.4. A description of the source, nature, quantity, and method of treatment, storage, and disposal for each potential controlled waste should be provided.
 - 12.1.5. Waste management measures should be in accordance with the following hierarchy of waste management, arranged in decreasing order of desirability: avoidance, recycling/reclamation, re-use, treatment to reduce potentially adverse impacts, disposal.

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

- 13.1. Impacts of the proposal in relation to dangerous goods and environmentally hazardous materials (being 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) 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 - <https://www.ntc.gov.au/codes-and-guidelines/australian-dangerous-goods-code>) that will be used during the construction and operation of the proposal.
 - 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. The measures (such as bunded areas or spill trays) to be adopted to prevent or control any accidental releases of dangerous goods and environmentally hazardous materials.

13.1.4. Contingency plans for when control measures, equipment breakdowns or accidental releases to the environment occur, including proposed emergency and clean-up measures and notification procedures.

13.1.5. Identification of any safety management requirements for the protection of human health and safety affecting the community.

14. Greenhouse gas emissions – the following information and matters should be addressed for Matter 14:

14.1. A discussion of the direct and indirect effects of the proposal, including construction, in relation to production, use and reduction of greenhouse gases and ozone depleting substances including:

14.1.1. Consideration of the evolving national response to climate change and greenhouse gas emissions, current Commonwealth and Tasmanian legislation, and the targets set in the Tasmanian Climate Change Action Plan 2023-2025 or any updated versions thereof available at the time of preparing the EIS.

14.1.2. An estimate of greenhouse gas emissions, energy production and energy consumption for both construction and operational phases of the Major Project, including emissions associated with vegetation removal (as relevant). Calculators are available on the Australian Government Clean Energy Regulator website.

14.1.3. Demonstration that the Major Project will implement cost-effective greenhouse best practice measures to achieve ongoing minimisation of greenhouse gas emissions, including in sourcing and disposal of materials. Where less emissions-intensive options are not adopted, justification should be provided and/or mechanisms to offset greenhouse gas emissions identified.

15. Rehabilitation – the following information and matters should be addressed for Matter 15:

15.1. A discussion of proposed measures for rehabilitation of areas disturbed during construction of the Major Project, including:

15.1.1. A map showing areas to be disturbed during construction, in relation to natural values, waterways, sensitive receptors and other constraints.

15.1.2. Discussion of staging of construction, measures to minimise disturbance during construction and potential for progressive rehabilitation.

15.1.3. Discussion of appropriate measures for rehabilitation, including proposed use of materials and plantings, with prioritisation of native species and enhancement of natural values.

15.1.4. Provision of a conceptual progressive rehabilitation plan, including consideration of maintenance requirements.

16. Decommissioning – the following information and matters should be addressed for Matter 16:

16.1. A conceptual Decommissioning and Rehabilitation Plan should be provided for the Major Project, including:

16.1.1. Potential scenarios for end-of-life of the Major Project, including forecast Project lifespan and potential future site use.

- 16.1.2. Proposed staging and methodology for decommissioning of equipment on site, with potential for re-use elsewhere.
- 16.1.3. Proposed methodology for rehabilitating the site for appropriate future re-use, with consideration of the potential for restoration or enhancement of natural values.

Schedule 3: Avian mortality monitoring plan guidelines

1. Introduction, include:
 - 1.1. Brief project description and site location;
 - 1.2. Site layout plan;
 - 1.3. 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 (will the same search strategy be suitable for all turbines, based on terrain and surrounding vegetation);
 - 3.1.1.6. How searches are undertaken, i.e., car/foot/dog/all terrain vehicle, and how many observers.
 - 3.1.2. Management of searched areas, i.e., will vegetation require slashing 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 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;
 - 5.3. Reports of any dead or injured threatened species should be reported to Natural Resources and Environment Tasmania.
6. Review of the mortality monitoring plan and adaptive management.