

# Environmental Impact Statement Guidelines

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Lonnavale Broodstock RAS Facility  
Lonnavale*

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ENVIRONMENT PROTECTION AUTHORITY

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## Glossary and abbreviations

Term	Definition
Board	Board of the Environment Protection Authority
Case for assessment	Information required for environmental impact assessment, prepared according to the Board's requirements.
Director	Means the Director, Environment Protection Authority holding office under Section 18 of <i>Environmental Management and Pollution Control Act 1994</i> and includes a delegate or person authorised in writing by the Director to exercise a power or function on the Director's behalf.
EIS	Environmental Impact Statement
EMPCA	<i>Environmental Management and Pollution Control Act 1994</i>
EMPCS	Environmental Management and Pollution Control System. Objectives found in Schedule 1 of EMPCA.
Environmentally hazardous material	Means any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment and includes fuels, oils, waste and chemicals but excludes sewage.
EPA	Environment Protection Authority. Tasmania's independent principal environmental regulator which administers EMPCA and consists of a Board and a Director.
EPBCA	<i>Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i>
FPA	Forest Practices Authority
LUPAA	<i>Land Use Planning and Approvals Act 1993</i>
MNES	Matters of National Environmental Significance
NCA	<i>Nature Conservation Act 2002</i>
NRE Tas	Department of Natural Resources and Environment Tasmania
Noise sensitive premises (NSP)	Residences and residential zones (whether occupied or not), schools, hospitals, caravan parks and similar land uses involving the presence of individual people for extended periods, except in the course of their employment or for recreation.
Planning Authority	Council for relevant local government area
PEVs	Protected Environmental Values, as specified under the <i>State Policy on Water Quality Management 1997</i> (see <a href="#">PEVs for Tasmanian Surface Waters   EPA Tasmania</a> )
RMPS	Resource Management and Planning System, Tasmania. Objectives found in Schedule 1 of EMPCA.
Suitably qualified person	Means suitably qualified person in the opinion of the Director
TNVC	Threatened Native Vegetation Community as listed under the NCA
TSPA	<i>Threatened Species Protection Act 1995</i>

## Part A. Introduction

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

### The role of the EIS

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

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

Further information on the EPA Assessment Process is available on the [EPA website](#).<sup>1</sup>

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

### How the Board uses the EIS

The Board uses the EIS to inform decision making as part of the environmental impact assessment process. The EIS must be prepared in accordance with guidance provided by the Board under section 74(4) of EMPCA. The staff of the EPA support the Board during the assessment process.

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

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

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

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

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<sup>1</sup> See <https://epa.tas.gov.au/Pages/Assessment-Process.aspx>

## Planning information

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

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

## Australian Government environmental assessment

The Australian Government (Commonwealth) may have a role in the environmental assessment and approval of the proposal in addition to Tasmanian requirements. Approval under the *Australian Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is required for an action which has, will have, or is likely to have, a significant impact on a Matter of National Environmental Significance (MNES).

The nine MNES are:

- world heritage properties
- national heritage places
- wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed)
- nationally threatened species and ecological communities
- migratory species
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mining)
- a water resource, in relation to coal seam gas development and large coal mining development.

Information on the EPBC Act can be obtained from the [Australian Government, Department of Climate Change, Energy, the Environment and Water \(DCCEEW\) website](#),<sup>2</sup> or by calling 1800 803 772.

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

If a proponent elects to have their proposal assessed under the bilateral agreement, the EIS should specifically describe the implications of the proposal for the relevant EPBC Act controlling provisions. It must also contain a summary table showing that it addresses the matters specified in Schedule 4 of the [Commonwealth Environment Protection and Biodiversity Conservation Regulations 2000](#).<sup>3</sup>

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<sup>2</sup> See <https://www.dcceew.gov.au/environment/epbc>

<sup>3</sup> See [http://www8.austlii.edu.au/cgi-bin/viewdoc/au/legis/cth/consol\\_reg/epabcr2000697/sch4.html](http://www8.austlii.edu.au/cgi-bin/viewdoc/au/legis/cth/consol_reg/epabcr2000697/sch4.html)

## Part B. Instructions

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

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

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

### General requirements

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

**The EIS must not include information that is known to be false or misleading, and nothing should be omitted if it is known that without it the EIS would be false or misleading (section 43A of EMPCA).**

### Spatial and visual information requirements

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

- Use a consistent base plan throughout the EIS where appropriate, to allow elements to be overlaid and compared. Ensure that detailed information is clear and visible, particularly when using satellite images as background layers. This is best achieved using a geographical information system (GIS).
- Specify the coordinate reference system when providing or referring to spatial information, including maps, plans, grid coordinates and heights. Further information on coordinate reference systems used in Tasmania can be found on the [Land Tasmania website](#)<sup>4</sup>.

Recommended systems are:

- Horizontal – Geocentric Datum of Australia 1994<sup>5</sup> Map Grid of Australia Zone 55 (GDA94 MGA55)
- Vertical – Australian Height Datum (Tasmania) (AHD83).

## Independent Review

For large proposals, such as Class 2C activities, prior to submission to the EPA, the draft EIS should be independently reviewed by a suitably qualified person to confirm that it meets the requirements detailed in Guidelines issued for the proposal.

## Submission

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

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

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<sup>4</sup> See <https://nre.tas.gov.au/land-tasmania/geospatial-infrastructure-surveying/geodetic-survey/coordinate-height-and-tide-datums-tasmania>

<sup>5</sup> Geocentric Datum of Australia 2020 (GDA2020) is the new official datum for recording the horizontal location of spatial information in Australia, but is not yet fully implemented in Tasmania.

## Part C. EIS structure and content

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

### Title page

The title page must include:

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

### Executive summary

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

### Table of contents

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

### Glossary and abbreviations

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

### Proponent information

#### Proponent details:

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

#### Contact person’s details:

- Name
- Telephone
- Email address

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

## 1. Introduction

The introduction should provide:

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

## 2. Proposal description

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

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

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

### 2.1 Summary table

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

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

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

## 2.2 Detailed description of proposal

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

### 2.2.1 Project Components

- List the major items of equipment (including pollution control equipment) to be used in the proposed activity, and onsite facilities. Include detailed technical information on major items of equipment as appendices.
- Summarise the existing and proposed wastewater and sludge treatment systems, including identification of each treatment component, performance specifications and discharge.
- Specify the total footprint of the proposal.
- Describe potential environmental impacts while construction and upgrade works are occurring and mitigation measures in place for the continued performance of existing wastewater and sludge treatment systems during this phase.

### 2.2.2 Construction

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

### 2.2.3 Commissioning

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

### 2.2.4 Operation

- Describe the process(es) of operation in a step-by-step manner, using explanatory diagrams and flow charts where appropriate.
- Outline all raw materials (including water) required for operation. Detail sources, quantities, and characteristics.
- Identify and quantify all products, emissions and/or wastes produced.
- Outline all energy requirements for operation. Describe how energy demands will be met.
- Define the production capacity and rate for relevant processes. Include peak rates, daily average rates and annual production rates where applicable.
- Define the proposed hours of operation (hours per day and specific days per week). Specify any seasonal variations.

- Describe the volume, composition, origin, destination, and route for vehicle movements (road, rail, shipping, and air) likely to occur during operation, including timing of traffic flows. Specify what proportion of road usage and vehicle movements will involve over-dimension and heavy road vehicles. Compare the proposed vehicle movements with existing usage of relevant routes.
- If the proposal is associated with an existing activity, describe any current approvals or regulatory conditions. Provide details of the proposed ongoing use of the flow through system's water offtake and discharge, all ponds and tanks, drum screen, solid waste storage and all other associated infrastructure.

## 2.3 Maps, plans and figures

Spatial information should be presented in maps, plans, diagrams and imagery. These must be of high quality and reproducible in monochrome with all text and relevant features clearly visible. Maps and plans should include a north arrow, scale and legend. When spatial data (including maps, plans, coordinates and heights) are provided or referred to, the horizontal and vertical datum must be specified. At a minimum, provide the following:

### 2.3.1 General location maps

Provide general location maps of the existing environment and surrounding area (of a suitable scale), showing the site, the nearest residences in other ownership, other sensitive uses and residential zones within 1.5 km of the proposed activity and within the applicable attenuation distance<sup>6</sup>, and the transport route(s) to and from the activity.

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

**2.3.2 Map of the Land as defined in the Development Application (if applicable)** showing relevant Cadastral boundaries with title details, e.g. Volume/Folio 136529/1.

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

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

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<sup>6</sup> Refer to relevant planning scheme or State Planning Provisions

<sup>7</sup> Defined in the State Planning Provisions as 'a residential use or a use involving the presence of people for extended periods except in the course of their employment such as a caravan park, childcare centre, dwelling, hospital or school.'

### 2.3.4 Site Plan

Provide a site plan that includes existing and proposed conditions and features of the site. This may include:

- Elevation contours and levels;
- The position of topographic features including roads, tracks, waterways, and drains;
- The position of facilities, buildings, structures, major items of equipment, storage areas and loading or unloading areas; and/or
- A construction layout plan.

Geospatial data included on the plan(s) should also be provided to the Board in a geospatial vector format (shapefile or DXF). If the site plan is not based on a feature and level survey and the Board determines that this information is needed to adequately assess the proposal, such a survey may be requested during the assessment process.

### 2.3.5 Figures and flowcharts

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

## 2.4 Offsite infrastructure

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

## 3. Planning and socio-economic context

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

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

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

<sup>9</sup> Defined in the State Planning Provisions as 'a residential use or a use involving the presence of people for extended periods except in the course of their employment such as a caravan park, childcare centre, dwelling, hospital or school.'

- Consider any proposed or potentially sensitive uses within applicable attenuation distances from the proposal site, which have been or are likely to be granted approval under the local planning scheme.

Briefly describe the existing social and economic environment that may be affected by the proposal. This may include:

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

## 4. Project Alternatives

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

- Demonstrate how the proposal improves environmental outcomes in accordance with all relevant finfish legislation, policies, and plans<sup>11</sup>.
- Describe the site selection process and criteria.
- Evaluate any alternative sites considered. Justify the choice of the proposed site in terms of clearly defined environmental, social, economic, and technical considerations, including avoidance of environmental impacts.
- Describe the effect of any community consultation on the selection process.
- Identify and provide an assessment of other available technologies, materials, design options or management practices, where relevant, including how environmental impacts will be avoided. Evaluate the environmental performance of identified alternatives and provide justification for the preferred option.

## 5. Public Consultation

Describe any public consultation that has taken place during project planning and preparation of the EIS and summarise the results of this consultation. Describe any proposed future public consultation that will take place during project implementation and operation. The Board encourages early community engagement, as it often leads to better outcomes for all parties. Guidance on effective community engagement is available on the [EPA website](#)<sup>12</sup>.

## 6. Potential Impacts and Management

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

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

Use scientific data to support predictions and evaluate impacts and provide references to the data used. Where specialist reports have been required for key issues, summarise them within the body of the EIS

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<sup>10</sup> See: [Environmental Management and Pollution Control Act 1994](#)

<sup>11</sup> Such as the [State Policy on Water Quality Management 1997](#) and [Tasmanian Salmon Industry Plan 2023](#)

<sup>12</sup> See: [https://epa.tas.gov.au/Documents/Guidance on Community Engagement.pdf](https://epa.tas.gov.au/Documents/Guidance%20on%20Community%20Engagement.pdf)

where relevant, and attach the reports as appendices. Detail the qualifications of the authors of any specialist reports. Make sure that the information in the body of the EIS is consistent with the information in the appendices.

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

### **Existing Environment**

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

### **Methodology**

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

### **Assessment**

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

### **Avoidance and Mitigation Measures**

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

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

## Key issues

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

1. Potential impacts on water quality associated with construction and/or operation of the proposal.
2. Potential impacts on air quality, including odour, associated with construction and/or operation of the proposal.
3. Potential impacts from waste, including on water and air quality, associated with construction and/or operation of the proposal.
4. Potential impacts from noise associated with construction and/or operation of the proposal.

## 6.1 Water quality

Discuss potential impacts of the proposal on surface water during construction and operation, including methodology where appropriate.

### 6.1.1 Existing Environment

- Provide a description and map of the activity site with respect to topography and preferential surface water flow, existing surface water and stormwater drainage. Identify nearby water bodies and watercourses likely to be impacted by the proposal.
- Provide an overview of the receiving environment. Identify all relevant Protected Environmental Values (PEVs)<sup>13</sup>, including:
  - sensitive uses and associated water quality considerations;
  - seasonal water quality, hydrological characteristics and biological condition of the receiving environment;
  - reference to published or determined (site-specific) water quality guideline values for receiving environments. For information about the water quality management framework and evaluation criteria in Tasmania, refer to [Technical Guidance for Water Quality Objectives \(WQOs\) Setting for Tasmania, August 2020](#).<sup>14</sup>
- Provide and discuss results of baseline water quality and biological monitoring undertaken in the Russell River and Kemps Creek. Detail any other information relevant to assessing potential impacts, such as potential hydrological changes.
- Describe any existing wastewater and/or stormwater treatment on the site. Where available, provide an analysis of wastewater and/or stormwater quality as discharged from the existing activity, including discharges to the Russell River and to the wastewater reuse scheme.
- Include the results of monitoring in the report and provide separately as data. Provide metadata and monitoring data to the EPA following the instructions and using the Excel workbook templates or file formats provided on the [Water Quality Data Elements](#)<sup>15</sup> webpage.

### 6.1.2 Assessment

- Identify and characterise all liquid emissions that could arise from the proposal, including from industrial processes, waste treatment processes, fuelling, domestic/office facilities, stormwater or other sources.
- Describe any proposed changes to wastewater and/or stormwater treatment for the development. Describe the selected treatment technology, the likely volume and quality of effluent/water that will be

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<sup>13</sup> See <https://epa.tas.gov.au/environment/water/pevs-for-tasmanian-surface-waters>

<sup>14</sup> See [https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20\(WQOs\)%20Setting%20for%20Tasmania.pdf](https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20(WQOs)%20Setting%20for%20Tasmania.pdf)

<sup>15</sup> See <https://epa.tas.gov.au/environment/water/water-quality-data-elements>

produced and its fate in the environment, including wastewater storage, treatment, and discharge to a wastewater reuse scheme.

- Describe proposed stormwater management, including during reasonably foreseeable flood events. Include an assessment of the potential for pollutants to become entrained in stormwater and details of drainage control measures such as cut-off drains and sediment settling ponds.
- Provide details of any proposed and existing point sources discharge to the environment, including:
  - a description of the discharge pathway, including details of the length, depth and diffuser details of any proposed outfall infrastructure, as relevant.
  - a description of the proposed discharge regime, including consideration of frequency, continuity and rate of discharge. Where flow rate varies relevant patterns and statistics should be provided.
- Provide details of, and a map depicting:
  - proposed wastewater discharge locations
  - all components of the existing and proposed wastewater reuse schemes
  - preferential flow of stormwater arising from rainfall on the proposal site
  - location of stormwater collection system and identification of drainage areas and infrastructure reporting to the system.
- Evaluate the water quality impacts associated with effluent and contaminated stormwater discharge. Consider effluent quality, volume(s) and discharge regime in conjunction with receiving environment conditions. The evaluation should include consideration of seasonal variations in effluent and receiving environment water quality and quantity.
- Provide a Wastewater Reuse Management Plan (WREMP) that is consistent with the *Environmental Guidelines for the Use of Recycled Water in Tasmania, December 2002*<sup>16</sup>, and must include the following assessment information:
  - A water balance based on the volume of wastewater storage available and seasonal soil hydraulic capacity, crop requirement and nutrient budget, for 90<sup>th</sup> percentile and median wet years. The water balance must include any shandy water that may be used.
  - A nutrient balance for irrigated areas based on measured soil characteristics and estimated seasonal nutrient loads and agronomic aspects. Where excess nutrients may potentially be applied consideration of impacts on receiving surface and groundwaters must be provided and an action plan to ensure reduction of excess nutrient loads on any parcel of land over time.
  - A salinity management plan for irrigated areas, based on soil characteristics and proposed seasonal hydraulic load and agronomic aspects. Where excess salts are to be leached via winter rain, then the potential impacts to soil and subsoil sodicity, groundwater and receiving surface waters must be considered and a plan to reduce sodium loads to any one parcel of land provided.

### 6.1.3 Avoidance and mitigation measures

- Identify and assess available options for improved effluent management and minimisation of wastewater discharge, according to the hierarchy set out in the *State Policy on Water Quality Management 1997, Division 2: 'Management of Point Sources of Pollution'*.<sup>17</sup> Viable reduction or reuse options must be implemented. The assessment must include:
  - Details of any investigations undertaken to identify options for beneficial reuse of effluent.
  - Justification for any proposed emission of contaminants to surface water in accordance with the principles outlined in the *State Policy on Water Quality Management 1997*.

<sup>16</sup> Available from [https://epa.tas.gov.au/Documents/Use\\_of\\_Recycled\\_Water\\_December\\_2002.pdf](https://epa.tas.gov.au/Documents/Use_of_Recycled_Water_December_2002.pdf)

<sup>17</sup> See <https://epa.tas.gov.au/about-the-epa/policy-legislation-cooperative-arrangements/statutory-policies/state-policies-and-environment-protection-policies/state-policy-on-water-quality-management-1997>

- Provide details of an ambient monitoring plan to assess the impact of the wastewater reuse scheme and discharges to surface waters. This ambient monitoring plan must consider and complement previous ambient monitoring by generating information that can be used to identify any change in the environment that may come about as a result of the proposal.

For information about water quality management framework and evaluation criteria in Tasmania refer to [Technical Guidance for Water Quality Objectives \(WQOs\) Setting for Tasmania, August 2020](#).<sup>18</sup>

- In addition to the assessment details listed above, the WREMP is to include:
  - Management measures to mitigate biosecurity risks.
  - Details of arrangements to manage and record wastewater loads discharged to each landowner, and mechanisms to manage land and associated surface and groundwater impacts in conjunction with landowners.
  - Details of irrigation methods and management of irrigation rates in relation to field capacity.
  - Contingency management measures where land requires fallowing or active management to prevent a reduction in productivity and capacity for ongoing wastewater irrigation.
  - Details of potential for future expansion of wastewater reuse areas.
  - Surface water, groundwater, soil, and effluent monitoring programs as appropriate to manage potential impacts to land productivity and soil health, to groundwater and surface water, either directly or indirectly as a result of any potential land degradation.

Please note, the Water Management and Assessment Branch of the Department of Primary Industries, Parks, Water and Environment has advised that the construction of the proposed ponds would be considered 'dam works' under the Water Management Act 1999. For the proposed ponds, water extraction or any proposed obstruction of waterways, you are advised to seek advice from the Branch in regard to necessary licences or permits.

## 6.2 Groundwater

Discuss potential impacts of the proposal on groundwater (quality and quantity). Consider construction and operation phases and include methodology details where appropriate.

### 6.2.1 Existing Environment

- Where potential groundwater contamination could arise as a result of the activity or where groundwater extraction is proposed, provide a conceptual groundwater model. The conceptual model should show the hydrogeological environment, receptors and impact pathways related to the proposal to support the environmental impact assessment.
- Provide a map showing any proposed groundwater bores and the location of existing groundwater extraction bores nearest to the area impacted by the activity. Refer to [NRE's Groundwater Information Access Portal](#) where relevant.<sup>19</sup>
- Identify any surface water and groundwater dependent ecosystems that may receive groundwater from areas impacted by the proposal.
- Provide details of any baseline groundwater quality monitoring undertaken.

<sup>18</sup> See [https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20\(WQOs\)%20Setting%20for%20Tasmania.pdf](https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20(WQOs)%20Setting%20for%20Tasmania.pdf)

<sup>19</sup> See <https://wrt.tas.gov.au/groundwater-info/>

- Include the results of monitoring in the report and provide separately as data. Provide metadata and monitoring data to the EPA following the instructions and using the Excel workbook templates or file formats provided on the [Water Quality Data Elements](#)<sup>20</sup> webpage.

### 6.2.2 Assessment

- Discuss the potential impact of the proposal on groundwater (quality and quantity) with reference to groundwater assessments undertaken where appropriate.

### 6.2.3 Avoidance and mitigation measures

- Describe the measures proposed to avoid or mitigate potential adverse impacts to groundwater.
- Provide details of a groundwater monitoring plan to monitor the impact from the wastewater reuse scheme.
- Justify any potential impact to groundwater in accordance with the principles outlined in the [State Policy on Water Quality Management 1997](#)<sup>21</sup> and with reference to likely groundwater community values, associated guideline values and guideline values for receiving surface waters.

For information about the water quality management framework and evaluation criteria in Tasmania refer to [Technical Guidance for Water Quality Objectives \(WQOs\) Setting for Tasmania, August 2020](#).<sup>22</sup>

## 6.3 Air quality

This air quality assessment should detail potential impacts of the proposal on the local and regional air environment during construction and operation stages, including methodology were appropriate. Additionally, it should provide evidence demonstrating that the activity will not cause environmental nuisance or harm.

### 6.3.1 Existing Environment

- Provide a site map including the land boundary and the location of nearest sensitive receptors that could potentially be affected by atmospheric emissions from the proposed activities.
- Describe the existing environment including climatic/meteorological conditions, terrain, land use and air quality in the vicinity of the proposal.
- Provide information about any odour complaints related to the operation of the existing facility from the last 5 years.

### 6.3.2 Assessment

- Provide a description of the recirculated aquaculture system (RAS) facility activities spanning from the hatchery operation to transport of the grow-out fish off the site, as well as handling the broodstock till the end of life. Outline the stages of activities that contribute to the generation of air emissions and waste, and provide estimations for the amount and rate of each type of waste generated. This should include various types of sludge, waste feed, mortalities, and culls. Outline the seasonal variation that occurs in production quantities and resulting emissions.
- Provide a description of how the proposed effluent treatment system, sludge handling and treatment system, irrigation of wastewater, and sludge spreading operations have the potential to be sources of air emissions.

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<sup>20</sup> See <https://epa.tas.gov.au/environment/water/water-quality-data-elements>

<sup>21</sup> See <https://epa.tas.gov.au/about-the-epa/policy-legislation-cooperative-arrangements/statutory-policies/state-policies-and-environment-protection-policies/state-policy-on-water-quality-management-1997>

<sup>22</sup> See [https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20\(WQOs\)%20Setting%20for%20Tasmania.pdf](https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20(WQOs)%20Setting%20for%20Tasmania.pdf)

- Provide a site map showing the locations and names of all potential sources of atmospheric emissions (i.e. the materials and their storage, equipment and activities, transport of materials, and waste storage and management) from the existing and proposed sources associated with the hatchery facility, the proposed RAS facility, the effluent treatment system, sludge handling and treatment system, as well as the new irrigation storage dam and the sludge spreading activities. Sources such as wastewater, organic waste, sludge, and mortalities should be considered.
- For each identified emission source (point and fugitive), describe the composition of the atmospheric emissions, including odour and dust, their quantities and rates of emission to the atmosphere that may arise from activities on the site, as well as from loading, unloading, and transport of materials.
- Provide results of atmospheric dispersion modelling of air emissions from the proposed facility, including the new irrigation storage dam and irrigation areas, and an assessment of impacts of air emissions from all potential emission sources associated with the proposed activity against the requirements of the *Environment Protection Policy (Air Quality) 2004*. Modelling by a suitably qualified specialist must be conducted in accordance with EPA's *Atmospheric Dispersion Modelling Guidelines*<sup>23</sup>. The modelling should use conservative emission rates and should consider various possible scenarios of operation of the proposed facility. It is recommended that the scope and method of atmospheric dispersion modelling be discussed with the EPA's Air Modelling Officer prior to the commencement of any modelling work.
- Analyse the potential impacts of the atmospheric emissions from the existing and proposed activity during different stages of the operation carried out at the proposed facility (from the hatchery operation to the transport the grow-out fish off the site, handling the broodstock till the end of life, and handling the waste material including wastewater and sludge) with respect to the likelihood of causing environmental nuisance or environmental harm.

Include a variety of conditions including worst case scenario and upset conditions, and information about the time of day, duration, and frequency of the atmospheric emissions from the facility to establish suitable parameters for air dispersion modelling.

- Using publicly available information, describe how the future climate is projected to change in the facility's local government area. Outline how factors affecting generation and dispersion of air emissions may impact the local air quality at and beyond the site boundary.

### 6.3.3 Avoidance and Mitigation Measures

- Describe measures to be implemented to manage or mitigate all atmospheric emissions from the site that may cause environmental nuisance or harm at or beyond the site boundary. Include consideration of normal operations and maintenance conditions as well as potential impacts associated with any biological crisis and/or other periods when control and safety systems may not be fully functional. Management of potential impacts associated with the operation of the facility in adverse weather conditions should also be considered.
- Provide evidence of the application of Accepted Modern Technology, as defined in the *Tasmanian Environment Protection Policy (Air)*<sup>24</sup>, to reduce unavoidable emissions to the greatest extent practicable.
- Demonstrate that the assessment is consistent with the requirements of the *Tasmanian Environment Protection Policy (Air)* and any supplementary documents (including the *Board Statement Jan 2022*<sup>25</sup>).

<sup>23</sup> [Atmospheric Dispersion Modelling | EPA Tasmania](#)

<sup>24</sup> [Environment Protection Policy \(Air Quality\) 2004 | EPA Tasmania](#)

<sup>25</sup> [Air Pollutant Design Criteria - EPA Board Statement](#)

## 6.4 Waste management

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

### 6.4.1 Existing Environment

- Describe the existing impact of waste generated by the activity, including from new or upgraded waste systems.

### 6.4.2 Assessment

- Describe the source, nature and quantities of all general wastes likely to be generated by the proposal (liquid, gaseous, solid or other), including:
  - general refuse and by-products from the various stages of the process;
  - sludges and filter residues from the RAS water treatment and wastewater treatment systems and storages;
  - waste streams where sludges and residues from the existing activity will be treated by new or upgraded waste systems.
- Provide details of expected monthly volumes of mortalities, and sludge, and details of seasonal variations.
- Describe the anticipated composition of sludges and identify any potential contaminants in the sludge which have potential to limit its re-use.
- Evaluate the potential for and environmental risk from a large-scale fish mortality event.

### 6.4.3 Avoidance and mitigation measures

- Describe the methods and facilities proposed to collect, store, reuse, treat or dispose of each general waste stream. Describe collection or other maintenance requirements where relevant.
- Describe the source, nature, quantity, and method of treatment, storage and disposal for each controlled waste arising from the proposal.<sup>26</sup> Describe collection or other maintenance requirements where relevant.
- Describe the contingencies for avoiding and managing bulk quantities of dead fish or residues, including providing potential treatment and disposal options, in line with any biosecurity arrangements resulting from large-scale fish mortality events.
- Demonstrate that any waste management measures follow the following hierarchy of waste management, arranged in decreasing order of desirability:
  - Avoidance,
  - Reuse,
  - Treatment/stabilisation for reuse,
  - Recycling,
  - Energy recovery,
  - Repository storage (for future treatment/recovery),
  - Treatment/stabilisation for disposal,
  - Disposal/permanent containment.

For information on the landfill levy and reporting requirements for landfills or resource recovery facilities under the *Waste and Resource Recovery Act 2022* and Regulations, refer to [Waste and Resource Recovery, Department of Natural Resources and Environment Tasmania website](#).<sup>27</sup>

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<sup>26</sup> Controlled waste is defined in EMPCA and associated regulations. A non-exhaustive listing of categories of controlled waste can be found at <https://epa.tas.gov.au/business-industry/regulation/waste-management/controlled-waste>

<sup>27</sup> See <https://nre.tas.gov.au/environment/waste-and-resource-recovery>

## 6.5 Noise emissions

### 6.5.1 Existing Environment

- Provide a map showing the location of the closest noise sensitive premises (NSPs), the boundary of the Land, and existing and proposed noise sources on site, indicating the distance to NSPs.
- Conduct seven (7) days of unattended noise monitoring (including a weekend period) to evaluate the existing acoustic environment of the NSPs.

All methods of measurement should be in accordance with the *Tasmanian Noise Measurement Procedure Manual*<sup>28</sup>.

### 6.5.2 Assessment

- Specify the proposed hours of operation for the facility, and details of the duration (hours per day and months or weeks per year) of both the proposed and existing noise generating activities. Identify those activities which will be undertaken during daytime, evening and night-time (as relevant).
- Identify, list and characterise (include heights, sound power levels and noise attenuation measures) of all mobile and fixed source of noise generating equipment and activities including those associated 1/3 octave source noise data (C-weighted and A-weighted) to assess for low frequency and tonal noise.
- Provide the results of a noise model for the proposal undertaken by a suitably qualified person. The noise modelling must predict the 35, 40, 45 and 50 dB(A) noise level contours for normal and worst-case scenarios for operating activities and provide details including the following:
  - Figure/s showing the top view and 3-D view of the modelled scenario/s identifying all modelled noise sources in a clearly readable format.
  - Provide predicted cumulative noise impacts for 'with' and 'without' mitigation scenarios. Mitigation scenarios should investigate options to install local noise barriers near noisy activities and/or noise barriers at the site boundary located between noise sources and any NSP.
  - Source or predicted noise levels should be adjusted for dominant or intrusive noise characteristics (tonality, impulsiveness, modulation and low frequency noise).
- Discuss results from the completed noise monitoring including rating background noise and minimum  $L_{Aeq,10mins}$  noise levels for day, evening, and night-time periods.
- Determine appropriate design noise limits based on the results from the 7-days of unattended noise monitoring (including a weekend period).
- Describe the potential impacts from noise generated by the activity. The need or otherwise for detailed technical review and additional mitigation measures are to be considered and discussed in the EIS.
- Provide details of all assumptions and noise attenuation factors adopted for this assessment.

### 6.5.3 Avoidance and mitigation measures

- Investigate and discuss all feasible mitigation and management measures considering the following:
  - Measures should aim to sufficiently protect the existing acoustic amenity of the surrounding noise sensitive premises.
  - In order to avoid any sleep disturbance, the use of noisy activities should be restricted to the daytime period only. Effective mitigation measures and strong justifications must be discussed for any proposal to operate at night. When assessing the night-time noise emissions, potential to cause any sleep disturbances must be addressed.
  - All noisy fixed plant equipment with a line of sight to any NSPs should have acoustic screen or enclosure to minimise noise emissions.

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<sup>28</sup> [https://epa.tas.gov.au/Documents/Noise\\_Measurement\\_Procedures\\_Manual\\_2008.pdf](https://epa.tas.gov.au/Documents/Noise_Measurement_Procedures_Manual_2008.pdf)

- Ensure that night-time noise emissions do not contain any intrusive or dominant characteristics to cause nuisance at any sensitive premises, when assessed in accordance with the *Tasmanian Noise Measurement Procedure Manual*.
- Cumulative noise emissions from the operation should not exceed:
  - 5 dB(A) over the background noise levels ( $L_{A90}$ ) for the daytime and evening period, and
  - the existing background noise levels ( $L_{A90}$ ) for the night-time period.
- Consideration should be given to the requirements in section 5 of the Tasmanian [Environment Protection Policy \(Noise\) 2009](#). **Error! Bookmark not defined.**

## 6.6 Biodiversity and Natural Values

Discuss impacts of the proposal on biodiversity and nature conservation values (terrestrial and aquatic). Include details on how information has been collected or generated where applicable.

### 6.6.1 Existing Environment

- Specify and map known records of fauna, flora, vegetation communities and habitat, including aquatic as relevant, including reference to:
  - threatened species, communities and habitats, including those listed under the relevant Schedules of the Australian Government EPBC Act and the Tasmanian [Threatened Species Protection Act 1995](#) (TSPA)<sup>29</sup> and Tasmanian [Nature Conservation Act 2002](#) (NCA).<sup>30</sup>
- Specify and map known records of weeds, pests and diseases.
- Provide the results of terrestrial and/or aquatic (as relevant) natural values surveys undertaken by a suitably qualified person(s), in accordance with relevant survey guidelines.<sup>31 32</sup>

The survey should target the following species as identified as being present or potentially present on or near the site, in Table 1 and 2 below.

**Table 1** Threatened Flora

Species	Common Name	TSPA
<i>Pomaderris elachophylla</i>	Small-leaf dogwood	Vulnerable
<i>Westringia angustifolia</i>	Narrowleaf westringia	Rare

**Table 2** Threatened Fauna

Species	Common Name	TSPA / EPBCA
<i>Accipiter novaehollandiae</i>	Grey goshawk	Endangered / -
<i>Aquila audax subsp. fleayi</i>	Tasmanian wedge-tailed eagle	Endangered / Endangered
<i>Haliaeetus leucogaster</i>	White-bellied sea eagle	Vulnerable / Marine

<sup>29</sup> See <https://www.legislation.tas.gov.au/view/html/inforce/current/act-1995-083>

<sup>30</sup> See <https://www.legislation.tas.gov.au/view/html/inforce/current/act-2002-063>

<sup>31</sup> See <https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments>

<sup>32</sup> See [Devil Survey Guidelines and Advice.pdf \(nre.tas.gov.au\)](#)

Species	Common Name	TSPA / EPBCA
<i>Lathamus discolor</i>	Swift parrot	Endangered / Critically endangered
<i>Lissotes menalcas</i>	Mount Mangana stag beetle	Rare / -
<i>Tyto novaehollandiae castanops</i>	Tasmanian masked owl	Endangered / Vulnerable
<i>Litoria raniformis</i>	Green and gold frog	Vulnerable / Vulnerable
<i>Sarcophilus harrisii</i>	Tasmanian devil	Endangered / Endangered

If any listed threatened species are identified and will be impacted by the proposed development, a permit to take under the TSPA will be required. The processing of permit applications may take up to four weeks. Information on applying for a permit, including application forms, can be found on the NRE Tas website: [Permit to Take Threatened Species \(for Consultants & Development-related Activities\)](#).

If surveying identifies any threatened species, or their habitat, listed under the EPBCA that may be impacted by the proposed development, the proponent should make themselves aware of their obligations under the EPBCA.

- Identify any freshwater ecosystems of high conservation management priority using the [Conservation of Freshwater Ecosystem Values \(CFEV\) database](#),<sup>33</sup> including values in the vicinity of the proposal. The specific CFEV information should be Conservation Management Priority Potential.
- Specify and map 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.
- Describe natural processes of particular importance for the maintenance of the existing environment (e.g. fire, flooding, etc).

### 6.6.2 Assessment

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

- Flora, vegetation communities and habitat, with particular reference to threatened species, communities and habitats listed under the relevant Schedules of the EPBCA, TSPA and NCA, including consideration of:
  - Direct impacts, such as disturbance, clearing, excavation or burning;
  - Indirect impacts, such as changes in hydrogeological flows, fragmentation of populations or introduction of weeds, pests or diseases;
  - Cumulative impacts with other human activity.
- Fauna, with particular reference to threatened species, communities and habitats listed under the relevant Schedules of the EPBCA, TSPA and NCA, including consideration of:
  - Direct impacts, such as collision risks from both vehicles<sup>34</sup> and infrastructure, clearing or other physical changes to breeding and hunting or foraging habitat;
  - Indirect impacts, such as changes in disturbances to nesting, impacts of noise and light, changes in prey or food availability or introduction of pests or diseases;
  - Cumulative impacts with other human activity.
- The environmental impacts associated with vehicle movements.

<sup>33</sup> See <https://nre.tas.gov.au/water/water-monitoring-and-assessment/cfev-program>

An increase in night-time (between one hour before sunset and one hour after sunrise as defined by the Bureau of Meteorology) traffic on internal and nearby roads of more than 10% combined with a high abundance of Tasmanian Devils and/or Tasmanian Devil roadkill records in the Natural Values Atlas is considered significant regarding likely impacts on the Tasmanian Devil<sup>35</sup>.

- The following as relevant:
  - Existing conservation reserves that may be affected by the proposal, with reference to the management objectives of the reserve(s) and the reserve management plan(s).
  - Other species, sites or areas of special conservation significance, including areas of wilderness or scientific value.
  - Sites of geoconservation significance or natural processes (such as fluvial or coastal features), including sites of geoconservation significance listed on the Tasmanian Geoconservation Database.

### 6.6.3 Avoidance and Mitigation Measures

- Describe management measures that will be implemented to avoid adverse impacts to threatened fauna, flora and vegetation communities and other natural values, including management of weeds, pests, diseases and biosecurity.
- Include any roadkill management measures as required in the *Survey Guidelines and Management Advice for Development Proposals that may impact on the Tasmanian devil*.
- Where impacts cannot be avoided, present proposed measures to minimise and mitigate adverse impacts on biodiversity and nature conservation values.
- Identify potential residual impacts<sup>36</sup>.
- Discuss any offset<sup>37</sup> proposed for residual impacts, including likely benefits from such an offset.
- Discuss rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity, including any proposed seed collection and progressive rehabilitation program.

## 6.7 Dangerous goods and environmentally hazardous materials

Dangerous goods and environmentally hazardous materials are any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment. This includes fuels, oils, waste and chemicals. Discuss the potential impacts of dangerous goods and environmentally hazardous substances used in or generated by the proposal. The discussion should:

- Provide a map showing the location of temporary and permanent storage areas for fuels, oils, and other dangerous goods or chemicals.
- Describe the nature, quantity and storage location of all environmentally hazardous materials including Dangerous Goods (as defined in the [Australian Code for the Transport of Dangerous Goods by Road and Rail](#))<sup>38</sup> that will be used during the construction and operation of the proposal.
- Detail measures to be adopted to prevent or control any accidental releases of dangerous goods and environmentally hazardous materials. Examples include bunding or spill trays.
- Provide contingency plans for when control measures fail, equipment breaks down or accidental releases to the environment otherwise occur. Include detail on proposed emergency and clean-up

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<sup>35</sup> See the *Survey Guidelines and Management Advice for Development Proposals that may impact on the Tasmanian Devil (Sarcophilus harrisi)* for more information.

<sup>36</sup> As defined in Appendix A of these Guidelines.

<sup>37</sup> See Appendix A of these Guidelines under Residual Impacts.

<sup>38</sup> See <https://www.ntc.gov.au/codes-and-guidelines/australian-dangerous-goods-code>

measures and notification procedures. Identify any safety management requirements for the protection of human health and safety where incidents may affect the community.

## 6.8 Greenhouse gas emissions, ozone depleting substances and climate change

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

- Provide an inventory of projected scope 1, scope 2 and total greenhouse gas emissions,<sup>39</sup> energy production, and energy consumption for a year of operation. Describe the methods used to develop the inventory<sup>40</sup>. Discuss potential annual variation that may occur.
- Estimate ‘whole of life’ greenhouse gas emissions for the proposed development. Include details of the methodology used.
- Describe the direct and indirect effects of the proposal on greenhouse gas production and ozone-depleting substances produced by the existing activity, as well as any associated benefits of the proposal.
- Describe the potential impacts of climate change upon the proposal. For example, it may be appropriate to plan for more intense storm events, more severe fire weather, and/or long-term sea level rise.
- Discuss impacts of the proposal in terms of the evolving national response to climate change and greenhouse gas emissions and the targets set in the [Climate Change \(State Action\) Act 2008](#) (Tas),<sup>41</sup> [Tasmania’s Climate Change Action Plan 2023-25](#)<sup>42</sup> and the [Climate Change Act 2022](#) (Commonwealth).<sup>43</sup>
- Demonstrate that the development will use cost-effective, best practice measures to minimise future greenhouse gas emissions.
- Detail measures proposed to minimise emissions and describe the anticipated effectiveness of these measures. Where less emissions-intensive options are not adopted, provide sufficient justification and/or mechanisms to offset greenhouse gas emissions.

**Note:** Proponents must determine whether they are required to report to the Commonwealth under the [National Greenhouse and Energy Reporting Act 2007](#).<sup>44</sup>

## 6.9 Socio-economic issues

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

- Include an estimate of total capital investment for the proposal and where that capital will be expended (particularly in relation to the source of large capital items of processing equipment).
- Describe impacts on local and state labour markets for both the construction and operational phases of the proposal. The number and nature of direct and indirect jobs arising from the proposal must be detailed. Skills and training opportunities should also be discussed.
- Describe impacts on upstream/downstream industries, both locally and for the State.

<sup>39</sup> More information on categorising emissions can be found at <https://www.cleanenergyregulator.gov.au/NGER/About-the-National-Greenhouse-and-Energy-Reporting-scheme/Greenhouse-gases-and-energy>

<sup>40</sup> Calculators are available on the Australian Government Clean Energy Regulator website. See <http://www.cleanenergyregulator.gov.au/NGER/Forms-and-resources/Calculators#Emissions-and-Energy-Threshold-Calculator-202021-and-user-guide>

<sup>41</sup> See <https://www.legislation.tas.gov.au/view/html/inforce/current/act-2008-036>

<sup>42</sup> See [https://recfit.tas.gov.au/climate/climate\\_change\\_action\\_plan](https://recfit.tas.gov.au/climate/climate_change_action_plan)

<sup>43</sup> See <https://www.legislation.gov.au/Details/C2022A00037>

<sup>44</sup> See <https://www.legislation.gov.au/Details/C2007A00175>

- Detail the extent to which raw materials, equipment, goods and services will be sourced locally.

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

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

Proposals with higher-level or broader-scale environmental impacts need more comprehensive analysis of economic and social benefits, to allow the Board to evaluate both the benefits and adverse impacts of the proposal. Methods used to model social and economic impacts should be described where relevant. A description of how the local community has been consulted to determine its needs and aspirations in relation to the proposal should also be included. A social impact assessment and/or economic impact assessment may be required.

## 6.10 Fire risk

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

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

## 6.11 Infrastructure and off-site ancillary facilities

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

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

## 7. Monitoring and Review

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

Monitoring, review and reporting programs should be designed to:

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

## 8. Decommissioning and Rehabilitation

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

## 9. Management Measures Table

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

## 10. Conclusion

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

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

## 11. References

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

## 12. Appendices

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

## Appendix A: General principles for assessing environmental impacts

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

### General Approach

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

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

### Impact assessment

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

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

### Impact evaluation

Impact evaluation is the determination of the significance of impacts. Proponents should support conclusions about the significance of impacts using a structured argument that clearly describes the magnitude of the impact, the sensitivity of the affected receptors, and how they relate.

### Mitigation and Monitoring

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

- Describe the measures proposed;
- Describe how mitigation measures function to avoid or reduce the impacts;

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

### **Residual impacts**

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

- Revisit the first evaluation of impact, taking into account the effects of the measures to reduce the magnitude of the impacts and present a revised statement of significance, and
- Where required, identify appropriate actions that will offset impacts, based on the relevant guidelines.<sup>45</sup> Offset actions must present a measurable, relevant and ongoing net benefit which would not otherwise have been realised, and which is not accounted for by any other project or proposal.

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<sup>45</sup> Guidelines include Appendix 4: General Offset Principles from the Guidelines for Natural Values Surveys – Terrestrial Development Proposals, see <https://nre.tas.gov.au/Documents/Guidelines%20for%20Natural%20Values%20Surveys%20related%20to%20Development%20Proposals.pdf> and Offset Guidelines for Impacts to Threatened Eagles from Wind Farm Developments, see <https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/offset-guidelines-for-impacts-to-threatened-eagles-from-wind-farm-developments>

## Appendix B: Other issues and agency contacts

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

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

### **Conservation Assessments**

Department of Natural Resources and Environment Tasmania

Telephone: (03) 6165 4396

Email: [conservationassessments@nre.tas.gov.au](mailto:conservationassessments@nre.tas.gov.au)

Website: [www.nre.tas.gov.au/conservation](http://www.nre.tas.gov.au/conservation)

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

### **Heritage Tasmania**

Department of Natural Resources and Environment Tasmania

Telephone: (03) 6165 3700

Email: [enquiries@heritage.tas.gov.au](mailto:enquiries@heritage.tas.gov.au)

Website: [www.heritage.tas.gov.au](http://www.heritage.tas.gov.au)

Purpose: Historic cultural heritage, including State-level site listings, impacts and permits as required under the Historic Cultural Heritage Act 1995. Where works are proposed in or near a heritage place entered on the Tasmanian Heritage Register or likely to be of heritage significance to the whole of Tasmania, and a permit is required under the Land Use Planning and Approvals Act 1993, the proposal will be referred to Heritage Tasmania by the planning authority. There may also be additional sites listed under local planning schemes, impacts on which are assessed by the relevant planning authority.

### **Aboriginal Heritage Tasmania**

Department of Premier and Cabinet

Telephone: 1300 487 045

Email: [aboriginalheritage@dpac.tas.gov.au](mailto:aboriginalheritage@dpac.tas.gov.au)

Website: [www.aboriginalheritage.tas.gov.au](http://www.aboriginalheritage.tas.gov.au)

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

### **Parks and Wildlife – Property Services**

Department of Natural Resources and Environment Tasmania

Telephone: (03) 6169 9015

Email: [PropertyServices@parks.tas.gov.au](mailto:PropertyServices@parks.tas.gov.au)

Website: [www.parks.tas.gov.au](http://www.parks.tas.gov.au)

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

### **Agriculture and Water**

Department of Natural Resources and Environment Tasmania

Telephone: 1300 368 550

Email: [Water.Enquiries@nre.tas.gov.au](mailto:Water.Enquiries@nre.tas.gov.au)

Website: [www.nre.tas.gov.au/water](http://www.nre.tas.gov.au/water)

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

### **Transport Services**

Department of State Growth

Telephone: (03) 6166 3369

Email: [permits@stategrowth.tas.gov.au](mailto:permits@stategrowth.tas.gov.au)

Website: [www.transport.tas.gov.au](http://www.transport.tas.gov.au)

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

### **Mineral Resources Tasmania**

Department of State Growth

Telephone: (03) 6165 4800

Email: [info@mrt.tas.gov.au](mailto:info@mrt.tas.gov.au)

Website: [www.mrt.tas.gov.au](http://www.mrt.tas.gov.au)

Purpose: Mining Leases.

## Appendix C: Example of project description summary table

### Location and Planning Context

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

### Existing site

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

### Local Region

<b>Climate</b>	State the annual rainfall and predominant wind direction.
<b>Surrounding land zoning, tenure and uses</b>	Describe the surrounding land use, distance to the nearest residences in other ownership, note any conservation reserves or recreation areas in the area, and provide a coastal description if the coast is nearby.

<b>Climate</b>	State the annual rainfall and predominant wind direction.
<b>Species, sites or areas of conservation significance</b>	Provide information on species, sites or areas of landscape, aesthetic, wilderness, scientific or otherwise special conservation significance which may be affected by the proposal. Relevant information resources include the LIST ( <a href="http://www.thelist.tas.gov.au">www.thelist.tas.gov.au</a> ) and the Natural Values Atlas ( <a href="https://www.naturalvaluesatlas.tas.gov.au">https://www.naturalvaluesatlas.tas.gov.au</a> ).

### Proposed Infrastructure

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

### Inputs

<b>Water</b>	Include quantities and characteristics.
<b>Energy</b>	Include quantities and characteristics.
<b>Other raw materials</b>	Include quantities and characteristics.

### Wastes and Emissions

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

### Construction, Commissioning and Operations

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

<b>Operating hours (ongoing)</b>	e.g. xx-xx Monday to Friday xx-xx Saturday
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**Other Key Characteristics**

<b>Other</b>	Describe any additional characteristics relevant to the proposal/environment that are likely to provide important context as part of this summary.
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ENVIRONMENT PROTECTION AUTHORITY