

# **FINAL SCOPE GUIDELINES FOR THE INTEGRATED IMPACT STATEMENT**

*Proposed bleached kraft pulp mill in  
Northern Tasmania  
by Gunns Limited*



**Final Scope Guidelines for the Integrated Impact Statement (IIS): Proposed bleached kraft pulp mill in Northern Tasmania by Gunns Limited**

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## Preamble

The proposal by Gunns Limited (the proponent) for the development of a bleached kraft pulp mill in northern Tasmania has been declared a project of State significance. These guidelines have been prepared in accordance with the *State Policies and Projects Act 1993* to assist the proponent, government and non-government agencies and the public to understand what information is required to enable the Resource Planning and Development Commission (Commission) to undertake an integrated assessment of the project.

The Act<sup>1</sup> states that ‘integrated assessment’ “means a consideration of environmental, social, economic and community issues relevant to that project and such other issues as may be prescribed.” The guidelines below require the proponent to address all of these issues in its integrated impact statement (IIS).

Further information may be required of the proponent and others, by the Commission, during the assessment process.

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<sup>1</sup> Section 16(2) of the *State Policies and Projects Act 1993* (Tas)

## Frontispiece / Project information bulletin

This should briefly outline the assessment and approval process, and explain the function of the integrated impact statement (IIS) in this process. It should note that the IIS will be a consolidated document that will meet the requirements of the *State Policies and Projects Act 1993*, and the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth).

The opportunity for the public to comment on the draft IIS should be made clear. Information should be provided on:

- how to lodge a submission on the draft IIS;
- the date by which submissions must be received; and
- how the Resource Planning and Development Commission (Commission) will regard submissions as being public documents unless an argument is put to the contrary by the person making the submission.

This section should be designed in an easily read manner and be useable as a public information bulletin to explain all opportunities for public participation.

## Executive summary

This should be designed to be easily read in conjunction with the frontispiece and therefore be suitable for wide distribution to communities and other interested parties. At the same time it must provide a summary of all of the important impacts of the project and its environmental, social, economic and community implications that is clearly understandable by the public. It should contain headings that correspond to the main chapter headings and subheadings of these guidelines.

The executive summary should be available in sufficient copies to meet broad community demand.

## 1. Introduction

### 1.1 The project

This section should provide the following information:

1.1.1 Title and location of the proposed development, including any off-site facilities or infrastructure required to allow the project to proceed;

1.1.2 Names and addresses of the proponent(s), registered office(s) and relevant background information in terms of experience and environmental record;

Details of the corporate structure, ACN/ARBN numbers, corporate history, public or private nature of company and proposed project ownership structure (e.g. Australian subsidiary, joint venture, linkages with other Australian or overseas corporations), and environmental track record including details of any breaches of statutory requirements in Australia.

Details of any new or altered corporate structure in relation to the management and operation of the proposed project.

1.1.3 Objectives of the proposal;

This should comprise a broad statement of the objectives which have led to the proposed development, including the rationale and need for the project.

1.1.4 Scope of the project;

This should include:

- (1) the events leading up to the formulation of the project;
- (2) the capacity and principal components of the proposed development, referring to chapter 4 for a more detailed description of the proposed development;
- (3) the time frame for implementation of the proposal and the total life of the mill;
- (4) the anticipated total investment costs;
- (5) likely markets for the product; and
- (6) areas of either native forest or plantations, or both from which pulpwood would be sourced.

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- 1.1.5 Possible future development of the mill, including down-stream processing opportunities should be discussed. The potential for the pulp mill to be expanded to include one or more paper machines at a later date should be specifically addressed together with a commentary on the potential improvements in pulp yield and improved environmental performance that may be achieved.
- 1.1.6 The potential for upgrading the pulping and bleaching processes as technologies and information improve should also be specifically addressed.
- 1.1.7 The study team members and their roles.

**1.2 Legislative framework**

1.2.1 Assessment process

This section should provide a description of the assessment and approvals process, including all approvals required and the legislative powers to enforce standards and environmental outcomes.

In particular, the proponent must identify and address:

- the matters to be addressed in the environmental, economic, social and community impact assessment as required under the Tasmanian *State Policies and Projects Act 1993* and its requirement that the project demonstrates how it will further the objectives of the Tasmanian Resource Management and Planning System (see Appendix A), including the definition of sustainable development;
- the matters to be dealt with by environmental impact statements as required under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) (Appendix B of these guidelines). The Minister for the Environment and Heritage has decided that his approval would be needed under the EPBC Act for the project to proceed and the proponent must therefore address the matters required under that Act in the IIS. The controlling provisions for this proposal under the EPBC Act are sections 18 and 18A (Listed threatened species or ecological communities), 20 and 20A (Listed migratory species) and 23 & 24A (Activities involving the Commonwealth marine environment);
- other relevant Commonwealth legislation if applicable, for example, the *Environment Protection (Sea Dumping) Act 1981* and the *Sea Installations Act 1987*; and
- other relevant Tasmanian legislation and State Policies including, for example, the *Water Management Act 1999*, the *State Policy on Water Quality*

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*Management 1997, the Threatened Species Protection Act 1995 and the State Coastal Policy 1996.*

Note: the references to the legislation in these guidelines are those that are current at the date of issue of these guidelines. The project proponent is to have regard to possible legislative changes.

### 1.2.2 Legislation

Outline the relevant provisions of various Australian Government and Tasmanian statutes under which approval or consideration is required, either for the whole proposal or specific aspects of the proposal, before it can proceed.

### 1.2.3 Planning scheme amendments

Identify and address the relevant planning schemes for the proposed sites and areas for related infrastructure and, where appropriate, the need for a planning scheme amendment. Where the need for a planning scheme amendment has been identified, a draft amendment should be prepared and included in the IIS (cross-reference to 4.4.1(1) and (13)).

### 1.2.4 Government agreements, policies and strategies

Outline the relevant international agreements and Australian, Tasmanian and local government policies and strategies with which a project of this nature would be expected to comply. Describe how the project complies with these agreements, policies and strategies. The following is a list of the more important international agreements and Australian, national and State policies and strategies that provide the policy context for the pulp mill project:

#### **International agreements**

- Stockholm Convention on Persistent Organic Pollutants;
- Convention on Biological Diversity;
- United Nations Convention on the Law of the Sea (UNCLOS);
- United Nations Framework Convention on Climate Change;
- Convention on Wetlands of International Importance Especially as Waterfowl Habitat (the Ramsar Convention);
- Migratory Birds Agreements with China and Japan (CAMBA and JAMBA);
- Montreal Protocol on Substances that Deplete the Ozone Layer;
- Convention for the Prevention of Pollution from Ships (MARPOL);

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- Convention on the Prevention of Marine Pollution by Dumping of Wastes and other matter, 1972, (“London Convention”) and the 1996 Protocol to the Convention; and
- IMO Convention for the Control and Management of Ships’ Ballast Water and Sediments.

**Domestic**

- National Strategy for Ecologically Sustainable Development;
- National Strategy for the Conservation of Australia’s Biological Diversity;
- Intergovernmental Agreement on the Environment;
- National Greenhouse Strategy;
- National Guidelines for Protecting Critical Infrastructure from Terrorism;
- Australia’s Oceans Policy;
- Coasts and Clean Seas Initiative of the Natural Heritage Trust Program;
- National Forest Policy Statement and Regional Forest Agreements;
- Commonwealth Coastal Policy;
- AQIS Ballast Water Management Requirements for international vessels;
- Australian Water Quality Guidelines for Fresh and Marine Waters; and
- Australian Water Quality Monitoring and Reporting.

**Tasmanian**

- Tasmanian State Coastal Policy 1996;
- Tasmanian State Policy on Water Quality Management 1997;
- Tasmanian State Policy on the Protection of Agricultural Land 2000;
- Threatened Species Strategy 2000;
- National Pollutant Inventory (National Environment Protection Measure);
- Ambient Air Quality (National Environment Protection Measure);
- Tasmanian Environment Protection Policy (Air Quality) 2004;

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- Movement of Controlled Wastes (National Environment Protection Measure);
- Used Packaging Materials (National Environment Protection Measure);
- Assessment of Site Contamination (National Environment Protection Measure); and
- Diesel Vehicle Emissions (National Environment Protection Measure).

1.2.5 Briefly outline the environmental standards, industry practice notes and guidelines that will be applicable to this proposal.

## **2. Justification for the project and consequences of not proceeding**

### **2.1 Need for the proposal**

This section should describe the pulp mill in the context of international pulp import and export markets and the predicted benefits and costs of the pulp mill with respect to Tasmania and Australia.

Provide a descriptive and quantitative analysis of the benefits and costs of the pulp mill, including but not necessarily limited to, an assessment of the pulp mill impacts on the Australian balance of trade and associated services and markets. This should include a summary of overall conclusions of the net pulp mill impacts based on environmental, social, economic and community costs and benefits. Cross-reference to chapters 7, 8 and 9 where appropriate.

### **2.2 Consequences of the project not proceeding**

Provide a critical analysis that justifies the project and describe the consequences (including social, environmental, economic or community impacts) of not proceeding with the project. Cross-reference to chapters 7, 8 and 9 where appropriate.

### **3. Public consultation**

Details should be given on the areas where communities were consulted, the form, level, nature and results of public consultation which took place in project formulation, project planning, risk assessment and in the preparation of the IIS.

Details should also be provided on any envisaged ongoing community liaison program, such as the chemical industry's Responsible Care program, or other community liaison programs currently being practised by Tasmanian industries.

## 4. Project description

### 4.1 General

The proponent is required to provide sufficient information on all aspects of the project in order to allow the Commission to complete an integrated assessment. In particular this section should present an outline of the project, including:

- its key objectives;
- overall specifications and key infrastructure components;
- proposed method of operation and operational life; and
- technical and performance requirements.

Further information may be sought on issues set out as the project description is finalised including the development and operation of any facility or infrastructure on or off the mill site which is necessary or convenient for the implementation of the project. This includes but is not limited to any facility or infrastructure for:

- (a) the supply or distribution of energy to or from the mill;
- (b) the collection, treatment or supply of water;
- (c) the treatment, disposal or storage of waste or effluent;
- (d) access to or from the mill;
- (e) transport to or from the mill;
- (f) the storage of pulp at or transport of pulp from a sea port in the northern region or the north-western region; and
- (g) the production of materials for use in association with the construction and operation of the mill.

### 4.2 Pulpwood supply – hardwood and softwood

#### 4.2.1 The following information should be included in the IIS.

- (1) A description generally of the forestry operations in Tasmania providing pulpwood of any types for the proposed mill, from public and private lands, plantations or otherwise, indicating the statutory basis for such operations and the supply of pulpwood. Show how the statutory provisions address environmental, social, economic and community issues.

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- (2) Details of any feedstock intended to be sourced outside of the Tasmanian Regional Forest Agreement (as amended).
- (3) A description of how forestry operations and the supply of pulpwood of all types and age classes, from public and private lands, for the proposed mill, will address the objectives and provisions of the Tasmanian Regional Forest Agreement (as amended).
- (4) Details of any intensification of forestry operations in Tasmania (including conversion of native forest and the establishment of plantations on agricultural land (hardwood or softwood) and silviculture practices) for the supply of pulpwood of all types (from now until the end of the projected life of the mill), the likely environmental, social, economic and community issues and effects of any such intensification, and how those effects will be addressed.
- (5) In the event that the Tasmanian Regional Forest Agreement is not renewed when it expires in 2017, and given that the projected life of the mill extends to 2037, specify the principles, codes and practices which will be considered, incorporated and applied in undertaking forestry operations for the supply of pulpwood of all types and age classes on a sustainable yield basis between the years 2017 and 2037. (This should be based on the assumption that the existing Tasmanian legislation and supporting instruments remain essentially unaltered.)

Show how such matters and implementing measures will address the likely environmental impacts of such future forestry operations.

- (6) Indications of the likely supply zones (public and private sources) in Tasmania from which pulpwood of any type for the mill will be obtained over the projected life of the mill. Specify locations of the native forests and the plantations part or all of which are covered by any relevant wood supply agreements or ongoing negotiations for such agreements to secure wood supplies for the proposed mill.
- (7) Details of any imports of pulpwood, from interstate or international sources, of all types either as logs (barked or debarked) or in the form of woodchips.

Details of any quarantine measures and specialised handling which will need to be applied in the case of imported pulpwood.

(This information is necessary to understand and assess the impacts which may result from the transportation of logs, wood chips, sawmill residues and other sources of fibre to the mill, and sufficient detail should be provided to serve this purpose).

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- (8) The type and species of pulpwood required for the project (hardwood/softwood), and associated age classes.
- (9) The quantity of pulpwood (including the maximum ratio of softwood and hardwood to be used in manufacturing pulp in any one time) required for the project (thousands tonnes per annum).
- (10) A broad indication of the proportion of young (less than 30 years old) to older wood (more than 30 years old) which is likely to form the feedstock for the mill. A projection any changes to the proportion of younger and older wood used as feedstock over the life of the mill should also be provided.

(This information is required as the age of the wood will affect pulp yield and bleaching requirements, and, in consequence, emissions from the mill. In any case, the limits indicated in the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*, are to be met.)

- (11) Detail the arrangements which are or will be in place to secure a sufficient supply of pulpwood for the projected life of the mill.
- (12) Specify if and how the pulpwood supply including the security of supply might vary through the life of the project, and the likely effect of such variations in terms of the issues identified in the preceding paragraphs of this clause.
- (13) A demonstration of how the supply of pulpwood of all types and age classes and from all Tasmanian sources is to be maintained on a sustainable yield basis.

Note: this should include a discussion on the use of pulpwood from Tasmanian plantations on a sustainable yield basis for the mill, which indicates possible scenarios for the use of plantation wood in the mill and canvasses the feasibility and environmental issues associated with an “all plantation” sustainable yield wood supply strategy.

Provide details of the calculations and assumptions upon which the sustainable yield for the supply of pulpwood of all types and age classes to the mill over the projected life of the mill has been determined.

- (14) Provide details of the quantity of Tasmanian pulpwood currently exported that will be redirected for the supply of pulpwood in the mill.

## 4.3 Mill development

### 4.3.1 Environmental aspects

- (1) There must be a full description of the proposed mill development, including the technical, economic and environmental reasons for the selection of the process to be used. Detailed technical information on each unit operation, including the operation of both elemental chlorine free (ECF) and totally chlorine free (TCF) bleaching processes (if relevant), should be included in appendices.
- (2) Describe the accepted modern technologies (AMT), best available techniques (BAT) as regards the Stockholm Convention and best practice environmental management (BPEM) that the mill would employ. (Definitions of BPEM, AMT and BAT are provided in the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*.) If the proponent intends to employ technologies and practices that are different from those included in the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*, the rationale for the departure from these technologies and practices must be explained and justified.
- (3) The pulp production process in operation must be described and illustrated in a step by step manner from the delivery and storage of wood and other raw materials through to the storage and shipment of product. Flow charts, diagrams etc should be used where appropriate. Include details of production rates for each process operation including both short-term peak rates and daily average rates as a minimum. Overall material balances (OMB), millwide water balances (MWWB) for winter and summer conditions and soda-sulfate balances (SSB) should be provided as a minimum to document these scenarios.
- (4) All chemical production and chemical recycling facilities associated with the mill must be identified and the production processes described. The extent to which some materials are supplied over the fence direct from other manufacturers must be identified and respective responsibilities defined.

Where the mill may produce chemicals for sale to other industries off-site, a description of quantities, storage and transport should be included.

- (5) A site plan must be provided on a scale sufficient to clearly show the boundaries of the site and vehicle access in and around the site. All buildings, storage areas and major constructions should be identified. The major items of equipment and on-site facilities must be described.

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Note: Fire protection, liquor and spill containment, and drainage maps, to an agreed standard, will be required prior to commencement of operations.

- (6) The types, quantities, characteristics of protection systems and storage arrangements (including location) for all dangerous and environmentally hazardous materials on the site must be identified, including oil.
- (7) The raw materials (other than pulpwood - see 4.2 above) required for the project (including water) (see MWWB above) must be specified. Quantities and optional sources of supply, particularly for limestone, water, bleaching chemicals, pulping make-up chemicals and other additives and catalysts (see OMB above) must be given. This includes a description of the source, transportation and storage of bark, fines, sawdust, woodwastes and other forest residues, including quantities and whether green or oven dried, which may be fed into the power boiler. Any environmental considerations which might be taken into account in choosing between optional sources of supply of raw materials should be identified.
- (8) Energy requirements for the mill must be outlined and the means of meeting this demand described e.g. electricity, gas and oil (new or used/recycled). The net impact on the Tasmanian electricity grid and the National Electricity Market (upon Tasmania joining the national grid) must be outlined. A steam and power balance (SPB) should be provided as a minimum to document these scenarios.
- (9) All major sources of wastes (e.g. liquid, gaseous, or solid) including by-products from the pulp production process must be identified and the wastes characterised and quantified (flow rates, mass loads, concentrations, emission temperatures etc. as appropriate including, for example, for liquid emissions, BOD, COD, TSS, colour, nutrients, toxicity, AOX and more specific compounds such as methanol, PCDD, PCDF, chlorinated organics, chlorate and extractives. For a complete list refer to Table 9, Indicative core chemical, biological and other parameters to be monitored, of the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*). An environmental emission (EE) diagram should be provided as a minimum to document these pollutant parameters during both stable and upset conditions. Key strategies for management and containment of waste streams on the site must be outlined. Any foreseeable variations in waste generated during the start-up phase must be identified and any temporary storage requirements specified. Provide details of all point sources of atmospheric emissions (including odour) in tabular form containing at least the following fields:
  - Easting (mE)

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- Northing (mN)
- Source name &/or ID Code
- Height (m) of emission point
- Diameter (m) of emission outlet
- Terrain height at this location (m.a.s.l.)
- Exit temperature range ( C or K) of emission
- Exit velocity range (m/s) of emission
- Concentrations immediately prior to discharge for each significant contaminant in the emission
- Mass emission rates for each significant contaminant (g/s)
- An indication of whether emission rates are constant or variable. If they are variable then a description of how they are expected to vary.
- Identification of emission outlets containing multiple flues likely to cause enhanced buoyancy effects.
- Source description

Provide details of all process line, process area sources of atmospheric emissions (including odour) in tabular form containing at least the following fields:

- Start location
- Easting (mE)
- Northing (mN)
- Terrain height (m.a.s.l.)
- Height above ground level (m)
- End location
- Easting (mE)
- Northing (mN)
- Terrain height (m.a.s.l.)

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- Height above ground level (m)
  - Source name &/or ID code
  - Mass emission rates for each significant contaminant (g/s)
  - An indication of whether emission rates are constant or variable. If they are variable then a description of how they are expected to vary.
  - Source description
- (10) Facilities to collect and treat wastes should be described together with the resultant concentrations and mass loads of constituent pollutants such as listed in the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*, to be emitted after treatment. Due to the variable performance of waste treatment systems estimates of performance ranges within the above guidelines are required. These estimates should also be included in the EE diagram.
- (11) Facilities for the disposal of solid waste should be described. Any new landfill proposal must comply with the Landfill Sustainability Guide 2004, Department of Primary Industries, Water and Environment. In addition, describe the measures, both in terms of the design of the facility and management prescriptions, to control:
- leachate (to surface waters, groundwater and marine waters). A description of the pollutants, concentrations etc. likely to be contained in leachate should be included;
  - odour;
  - dust and litter;
  - pests; and
  - fires.

The life of the proposed facility should be estimated and an indicative final rehabilitation strategy should be presented (cross-reference to 7.8.4).

- (12) Facilities for the treatment and disposal of sewage must be described.
- (13) The location and nature of all points at which wastes will be emitted must be detailed, including, but not limited to, atmospheric stack parameters (location, height, diameter) for point sources and fugitive emissions (where possible) of gases and outfalls of liquid effluent.

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- (14) Major sources of noise must be identified and quantified, including location, elevation above the ground, sound power spectrum, any characteristics such as tonal, and any impulsive or low frequency components. The basis or source of this information should be provided. Heights of buildings and structures that have the potential for shielding of noise should be provided (cross-reference to 7.7.3).
- (15) Details of hours of operation in relation on-site and off-site facilities must be provided, including any seasonal variations.
- (16) Describe any upgrading of the existing wood chip mills at Long Reach and any intensification of operation arising as a consequence of the proposed mill.
- (17) Describe the facilities for log washing debarking, and reuse, recycling, treatment and disposal of wastewater.

#### 4.3.2 Development control requirements

To facilitate the assessment of the proposal a number of 'design' and 'construction' matters must be considered. This information must also be provided for any off-site ancillary facilities, such as the site(s) to receive solid waste from the project and storage facilities at ports. In this context, the following issues must be addressed:

- (1) assessment of visual impact of the development in relation to the skyline and character of the area, landscaping, floodlighting and other exterior lighting, including the location and direction of light sources and the strength of illumination;
- (2) proposed means of access to the site, including any proposed road, rail works required;
- (3) the effect of the proposal on the capacity of all existing infrastructure that will be used by the project during both the construction and operation phases.

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4.3.3 Dangerous goods requirements

Demonstrate how obligations under the *Dangerous Goods Act 1998*, specifically requirements invoked under the *Dangerous Goods (General) Regulations 1998* are met for the construction and operational phases of the project. Compliance with all Australian Standards in respect of the production, storage, use, transport and disposal of dangerous goods and hazardous materials is required.

4.3.4 Building design requirements

Demonstrate how requirements under the Worksafe Australia National Standard for Plant [NOHSC:1010 (1994)], requirements under the *Workplace Health and Safety Regulations 1998*, the Building Code of Australia including the Tasmanian Appendix, called up by the *Building Act 2000* and the *General Fire Regulations 2000* will be met for both the construction and operational phases of the project, and whether any variations through the Building Appeal System will be sought.

4.3.5 Application to take water

Describe any applications, including any applications to undertake dam works, that would normally be required under the *Water Management Act 1999* to take water, either directly or into storage from rivers and streams or groundwater.

4.3.6 Application to quarry

Describe any applications that would normally be required under the *Mineral Resources Development Act 1995*, the *Land Use Planning and Approvals Act 1993* and the *Environmental Management and Pollution Control Act 1994*.

**4.4 Use and Development of Infrastructure and Off-site Ancillary Facilities**

4.4.1 Any new infrastructure or off-site ancillary facilities required to allow the proposal to proceed must be described. In this context, the following issues must be addressed.

- (1) Plans for any new infrastructure or off-site ancillary facilities must be provided of a scale sufficient to clearly show the boundaries of the sites for new infrastructure or ancillary facilities and vehicle access in and around the sites. All buildings, storage areas and major constructions should be identified. The major items of equipment and off-site facilities must be described. Planning scheme amendments required for off-site facilities must be identified and detailed.
- (2) The method of, and routes for, the transport of all raw materials (including chemicals) used in the pulp production process to the mill, and product and solid waste from the mill. Requirements for new transport

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infrastructure, and specifically for upgraded and new road and rail links must be identified. For road and rail transport, the composition and frequency of movements and the time of day during which movements will take place must be specified.

- (3) Any foreseeable changes in the pattern of use of transport infrastructure which might occur during the life of the project should also be identified. Specifically, this should take account of any broad changes likely to be caused by anticipated shifts in the locations from which large volumes of wood will be drawn for the project.
- (4) The route for the pipeline to convey raw water from the river/stream offtake or dam storages to the pulp mill site water supply plant and the route to convey liquid effluent from the mill to an marine outfall if required after studies have determined that such a facility is the only prudent and feasible option. Studies should include the potential for reuse of water on or off the site, and reuse of water for primary industry.
- (5) The position and scale of any pipeline, demonstrating its visual impact (if any) and any other on or off site impacts.
- (6) Describe the proposed process and timeframe for negotiations with affected landowners concerning the acquisition of land titles, any attenuation areas, and easements or joint use and management of existing easements. A schedule of affected properties should be included.
- (7) New or altered infrastructure required for the supply and distribution of energy for the project.
- (8) New or altered infrastructure required to supply water for the project (including facilities for the collection, treatment and supply of water ).
- (9) New or altered port facilities which will be required as a consequence of the project, and any interlink storage facilities.
- (10) Facilities for the storage of pulp, raw materials, including oil, and chemicals at a port.
- (11) The site(s) for disposal of the residual solid waste from the mill if there are no technically, economically or environmentally feasible options for reuse of residual solid wastes from the mill. The proposed operator of the site should be identified and an outline provided of the development required to allow the site(s) to receive solid waste from the project. The projected life of the disposal site(s) must be estimated including any groundwater containment areas. Any temporary liquid or solid waste storage requirements must also be specified whether for start up or operational

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reasons. Any new landfill proposal must comply with the Landfill Sustainability Guide 2004, Department of Primary Industries, Water and Environment.

- (12) The need for approvals related to the use of public roads and public road transport shall be identified.
- (13) Describe the requirement, if any, for any construction of permanent or temporary housing and facilities required for accommodation during the construction and operation phases of the project. Include, where relevant, subdivision and any other planning scheme amendments.
- (14) Describe any requirements, including location for quarries, that may be required to obtain construction materials or materials required during operation of the project.

#### **4.5 Construction phase**

4.5.1 This section should provide a step by step description and timetable for major construction phase activities, with indicative timeframes for the completion of the major steps, for the pulp mill development, including any facility or infrastructure on or off the mill site (cross-reference to chapter 7 'Potential economic impacts and their management'):

- (1) The site preparation works involved.
- (2) The timeframe for construction.
- (3) Estimates of quantities of aggregate/fill and other materials that will be required, and likely sources.
- (4) The numbers of heavy vehicle movements and other traffic (including vessels) likely to be generated by construction activities, and the routes on which increased traffic volumes will occur.
- (5) The number of construction workers required in the various stages of construction, sources of labour, accommodation and support servicing requirement.
- (6) The proposed hours per day, and days per week of construction activities.
- (7) The nature, capacity and location of temporary construction equipment required on site (such as cranes, concrete batch plants, rock crushers, construction camps).

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- (8) The construction and burial method for any outfall pipeline, including across the coastal zone<sup>1</sup>, inter-tidal area and in the marine environment.

**4.6 Commissioning phase**

- 4.6.1** This section should provide a step by step description and timetable for major commissioning phase activities, with indicative timeframes for the completion of the major steps.

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<sup>1</sup> Under the *State Coastal Policy Validation Act 2003*, a reference in the *State Coastal Policy 1996* to the coastal zone is to be taken as a reference to State waters and to all land to a distance of one kilometre inland from the high-water mark. The Act states that “State waters” has the same meaning as in the *Living Marine Resources Management Act 1995*.(Tasmanian State Coastal Policy 1996)

## 5. Site selection for mill

### 5.1 General

This section must provide details to demonstrate clear strategic justification for the proposed location of the project. There is a need to demonstrate that sound strategic planning principles have been adopted in determining the most appropriate site. Specific strategic planning issues to be addressed are set out in section 5.2.5 below.

### 5.2 Site selection methodology

Describe the process, procedures and site selection methodology used to determine the mill site. This must include discussion of the following:

#### 5.2.1 Environmental site selection criteria, including but not limited to:

- (1) the site suitability criteria listed in the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*;
- (2) public health and community safety (risk) criteria;
- (3) proximity to land, water and marine uses which might be incompatible with the mill and its associated infrastructure;
- (4) proximity to natural areas of conservation - significance covering both terrestrial and marine-;
- (5) proximity to areas, including marine, of cultural, historic significance or Aboriginal heritage;
- (6) proximity to listed threatened species and ecological communities under the Tasmanian *Threatened Species Protection Act 1995*;
- (7) proximity to listed threatened species and ecological communities under the relevant Schedules of the EPBC Act, including the Spotted-tailed Quoll (*Dasyurus maculatus maculatus*), Eastern Barred Bandicoot (*Perameles gunnii gunnii*), Tailed Spider-Orchid (*Caladenia caudata*), the Tasmanian subspecies of Wedge-tailed Eagle (*Aquila audax fleayi*), Swift Parrot (*Lathamus discolor*), South Esk Heath (*Epacris exserta*), Shiny Grass Tree (*Xanthorrhoea bracteata*), Tasmanian Giant Freshwater Lobster (*Astacopsis gouldi*), Australian Grayling (*Prototroctes maraena*), Green and Gold Frog (*Litoria raniformis*) and listed marine species;

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Note: Reference to particular listed species does not exclude additional species. Any listed species that may be impacted by the proposal must be considered.

- (8) fatal flaws, compliance thresholds, and severity of impact;
- (9) transport and route selection;
- (10) site and infrastructure security considerations; and
- (11) proximity of floodplains (1:100 AEP level flood inundation).

5.2.2 The proponent's commercial criteria influencing site selection and the reasons for such influence, including but not limited to transport and route selection.

5.2.3 Criteria associated with the location or availability of raw materials (including water) and infrastructure.

5.2.4 Social and amenity criteria.

5.2.5 The following strategic planning details must be included in the explanation of site selection:

- (1) accordance with any planning strategies or planning guidelines or proposed planning strategies for the area, including regional planning strategies;
- (2) accordance with relevant local government strategic plan and operational plan;
- (3) accordance with the provisions of the relevant Planning Scheme, including the effect of zoning and any special area controls and overlay controls on use and development and any rezoning required;
- (4) the effect of any Council by-law;
- (5) Consistency with the objectives of the planning process contained in Part 1 and Part 2 of Schedule 1 of the *Land Use Planning and Approvals Act 1993* (Appendix C);
- (6) accordance with all State Policies.

### **5.3 Evaluation of site selection criteria**

Potential mill sites should be identified and evaluated in terms of the above criteria. It should be clearly demonstrated which criteria have been critical in determining which site is favoured and why the alternative sites have been rejected. Sensitivity analysis by the weighting of the criteria should be undertaken to confirm any specific sensitivities on the preferred site.

## 6. Existing environment

### 6.1 General

This section should provide a description of the existing environment, both local and regional, to establish the “baseline” for the evaluation of environmental impacts and the formulation of environment protection measures and monitoring programs. It must include details of the salient features of the existing environment and, where appropriate, provide maps, figures and diagrams. Baseline studies, as required under the site suitability criteria of the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*, should also be reported on. Assessments should also be made of any off-site ancillary facilities (including water storage facilities) and of areas that may provide sources for fill or other construction material.

#### Local airshed

Where the Guidelines require the proponent to provide details in relation to the ‘local area’, or in the ‘vicinity’ of the proposed mill, or the ‘local airshed’, the area to be addressed is defined as a circular area 12 kilometres in radius, centred on the position of the main emission stack on the proposed mill site, plus the areas North and South of this circular area within the Tamar River Valley that are below 100 metres above sea level and including any isolated hilltops and other features within that boundary that are above 100 metres in height. Refer to Appendix D for a map of the area covered by the local airshed.

#### Regional airshed

Where the Guidelines require the proponent to provide details in relation to the ‘regional airshed’, refer to Appendix E for a map of the area covered by the regional airshed. The regional airshed is defined as that area bounded by an arc with a 55 kilometre radius centred on the position of the main emission stack on the proposed mill site. The arc extends from a point on the northern coastline of Tasmania at a position 40° 57’ 29” S, 147° 31’ 33” E, East of Bridport on Waterhouse Beach, to a point at 41° 34’ 44” S, 146° 31’ 37” E, 48.4 kilometres due South of Point Sorell. The remainder of the boundary of the regional airshed is a line running due north from 41° 34’ 44” S, 146° 31’ 37” E, to Point Sorell at 41° 7’ 10” S, 146° 31’ 37” E. This area has been defined specifically so that it includes all of the airshed defined for the Tamar Valley Air Quality Strategy and also the major population and tourist centres at distances from the proposed mill site that fall within that range of distances over which odours from other kraft mills have been known to cause nuisance. The circular arc has been truncated along the 146° 31’ 37” E longitudinal line to account for the topography west of the Tamar Valley.

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Any detailed technical information should be included in the appendices to the IIS.

**6.2 Details of existing environment**

The following details must be included:

- (1) title description of subject land;
- (2) locality of site;
- (3) area of subject land (in hectares);
- (4) plan demonstrating the location of the subject site in relation to river or stream catchment boundaries and to the rest of the region and municipality;
- (5) the land use and planning history of the site;
- (6) the ownership of the subject land and surrounding land, including details relevant to risk assessment;
- (7) plan showing the subject land and its relationship to surrounding land use and development;
- (8) extent and description of catchment areas that could be potentially affected by stormwater runoff;
- (9) any rights-of-way, easements and covenants affecting the land;
- (10) existing access to the site (road, rail, etc);
- (11) any buildings or significant structures that are located on the subject land and surrounding land;
- (12) plan of the subject land showing location of buildings and significant structures, with representative building heights included as part of this plan or in tabular form;
- (13) plan showing the zoning of the subject land and surrounding land, and any specific planning controls that apply;
- (14) topography, climate and meteorology, including atmospheric characteristics which could influence fallout, gaseous pollutant impacts, water vapour dissipation, plume dispersion behaviour, noise transmission and vibration;

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- (15) present air quality, including peak levels of air pollutants and their duration, over a 12 month period in accordance with the requirements of D.3.4 – D.3.11 of the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*, and an assessment of reserve airshed (for the local airshed as defined in section 6.1 above) capacity with respect to National Environment Protection Standards for Air Quality, defined in Part 3 National Environment Protection (Ambient Air Quality) Measure as amended 2003;
- (16) geology, groundwater, hydrology including land stability and landslip, drainage lines and streamlines and natural water features such as wetlands, springs, water holes, geomorphology of the development site and surrounds, and in the vicinity of any off-site infrastructure;
- (17) present water quality data<sup>2</sup> (including chemical, physical and biological conditions) of water resources (including but not limited to lakes, dams, rivers, streams, estuaries and groundwater) and any current proposals for water offtake and discharge in the vicinity of the site, any proposed solid waste disposal site(s) and any proposed berth facilities;
- (18) environment of water resources downstream of any proposed water diversion or dam storage including water quality, water quantity, ecology and condition (including flora and fauna) of rivers, streams, estuaries and groundwater;
- (19) a plan showing the location of current dams and / or pipelines relative to the locations of any proposed offtakes, dams and pipelines to be used to supply water to the mill;
- (20) a plan showing the location of all licensed and Part V Rights under the *Water Management Act 1999* on the water resources to be utilised by the mill and likely to be impacted by the taking of water for the mill;
- (21) soil quality and background levels of potential kraft mill emissions including but not limited to dioxins<sup>3</sup>, pH levels and sodium sulfate from GPS identified typical uncultivated land at the development site and any proposed solid waste disposal site(s);

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<sup>2</sup> This includes sediment characteristics and those indicative core chemical, biological and other parameters specified in Tables 9 and 10 of the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*, plus sodium sulfate, as appropriate.

<sup>3</sup> Including all PCDD and PCDF congeners that are required for calculation of the internationally recognised measure of toxic equivalents (TEQ).

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- (22) description of terrestrial environment (including fauna, flora and ecological communities) of the development site and surrounds, and any proposed off-site infrastructure;
- (23) background levels of naturally occurring dioxins occurring in processed milk collected from cows grazing on lands directly under the regional airshed as specified in Appendix F<sup>4</sup>;
- (24) oceanographic dispersion characteristics including currents, tides, flushing ability, residence time, wave energy and temperature within the proposed mixing zone and the zone of influence if an outfall is required;
- (25) the marine environment, (including water quality and sediment characteristics<sup>5</sup>) and ecology (including flora and fauna and significant habitats (such as rocky reefs, sponge gardens, seagrass beds, inter-tidal areas and dunal systems) in the vicinity of the marine outfall pipeline and within the proposed mixing zone and the zone of influence. Refer to Appendix G for suggested methodology. The marine environment includes the environment in the Commonwealth marine area, as defined under the EPBC Act;
- (26) background levels of naturally occurring organochlorines and chlorine compounds occurring in the waters and bottom sediments within the proposed mixing zone and the zone of influence. Refer to Appendix G for suggested methodology.;
- (27) use of the marine environment in the vicinity of the pipeline and within the proposed mixing zone and the zone of influence, including commercial and recreational vessels (such as fishing), marine farming, navigation and other infrastructure (including undersea cables and pipelines);
- (28) listed threatened species under the *Threatened Species Protection Act 1995*;
- (29) listed threatened species and ecological communities under the relevant Schedules of the EPBC Act, including the Spotted-tailed Quoll (*Dasyurus maculatus maculatus*), Eastern Barred Bandicoot (*Perameles gunii gunii*),

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<sup>4</sup> This information is desirable but not an essential requirement for the draft Integrated Impact Statement and commencement of the assessment given that it would be a pre-operational monitoring requirement.

<sup>5</sup> This includes those indicative core chemical, biological and other parameters specified in Tables 9 and 10 of the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*, plus sterols, softwood-related resin acids, monoterpenes and diterpenes, as appropriate.

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Tailed Spider-Orchid (*Caladenia caudata*), the Tasmanian subspecies of Wedge-tailed Eagle (*Aquila audax fleayi*), Swift Parrot (*Lathamus discolor*), South Esk Heath (*Epacris exserta*), Shiny Grass Tree (*Xanthorrhoea bracteata*), Tasmanian Giant Freshwater Lobster (*Astacopsis gouldi*), Australian Grayling (*Prototroctes maraena*), Green and Gold Frog (*Litoria raniformis*) and listed threatened marine species;

Note: Reference to particular listed species does not exclude additional species. Any listed species that may be impacted by the proposal must be considered.

- (30) listed migratory species under the EPBC Act, in particular listed migratory marine species;
- (31) highlight any formal or informal reserves, and any identified areas or habitats of conservation significance, including requirements of international treaties, in relation to the site, off-site infrastructure or in the vicinity of the site or off-site infrastructure. List the values of any relevant reserves at the time of designation;
- (32) transport infrastructure and use in the vicinity of the mill and nearby towns and, the wood supply catchment as well as routes likely to be required for transport of raw materials;
- (33) existing utility services (power, water etc) and the availability and capacity of these services;
- (34) acoustic environment in the vicinity of the mill and on any major transport routes affected by changed traffic patterns due to the project, based on known sources of noise including industry, including existing woodchipping facilities, and transport infrastructure. The description of the current acoustic environment should be supported by suitable calculations (modelling) to describe the spatial distribution of sound pressure in terms of the major identified sources and must include a worst case scenario i.e. winter. A suitable level of consistency with quarterly noise measurements should be demonstrated. A list of noise sensitive locations should be identified for future assessment of noise impact;
- (35) light emissions within the vicinity of the proposed mill site;
- (36) landscape aesthetic, architectural and historical values in the vicinity of the mill (as defined in section 6.1 above);
- (37) description of any places in the vicinity of the proposed mill which are listed on the Interim List or in the Register of the National Estate or in any Planning Scheme or have potential heritage values;

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- (38) Aboriginal and cultural heritage significance of the mill site and sites which will be affected by the development of infrastructure directly resulting from the project and consequential impacts;
- (39) a summary of the social/demographic characteristics of the population living in the vicinity of the pulp mill site (as defined in section 6.1 above) (cross-reference to section 9.1, Social and community effects and issues);
- (40) an overview of the health status of the population in areas surrounding the mill site (as defined in section 6.1 above), with a view to identifying any specific health characteristics which may make these people more sensitive to impacts from the mill than might otherwise be expected. Liaise with the Department of Health and Human Services to identify surveys, studies and other relevant background information; and
- (41) an assessment of the risks and vulnerability of the site to natural hazards (e.g. flooding, earthquake, bushfire etc.).

## **7. Potential environmental impacts and proposed management measures**

### **7.1 General**

- 7.1.1 In this chapter the environmental and health issues associated with the mill development and infrastructure use and development must be addressed. The measures which will be taken to avoid or reduce potential adverse environmental and health impacts associated with the project must be outlined. Unavoidable residual impacts, and net environmental or health benefits likely to result from the project must be clearly identified.
- 7.1.2 This chapter should contain an assessment of any potential cumulative effects of the project (based on existing and other formally proposed developments in the region), which have not been addressed in previous sections. Interactions between biophysical, socio-economic and cultural effects of the project should be discussed where relevant.
- 7.1.3 If adverse residual effects from the project are considered unavoidable despite the adoption of best practice environmental management avoidance and mitigation measures, then where feasible proposals to offset such effects should be detailed. For example, if the loss of conservation values, community assets or amenities is considered unavoidable, measures to compensate for the conservation values to be lost, or the community assets or amenities to be affected should be proposed where feasible. Any offset actions proposed must be demonstrated to be 'real' actions. That is, the actions must have a measurable offset effect that can be related to the actual adverse effect of the project, and the actions must be ones, which would otherwise not have occurred.
- 7.1.4 Predictions of environmental and health impacts should be based on scientifically supportable data. The methodologies used or relied on should be referenced, together with the relevant research and investigations supporting them. Assumptions and scientific judgements should be stated clearly, the nature and magnitude of uncertainties should be clearly defined. Where relevant the choice of a particular risk assessment methodology over alternative methodologies should be explained. All information provided should be presented in a tabular format showing parameters and variables for each predictive modelling exercise. In addition, judgments or assumptions made by the proponent to run each best, worst, normal or abnormal scenario should be presented in a tabular format.
- 7.1.5 Where feasible all investigation, control and compliance testing must be performed by NATA (National Association of Testing Authorities Australia) accredited personnel and in a NATA registered laboratory, or a laboratory of

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international reputation approved by the regulatory authority, and conducted in accordance with all current Australian or International Standards Organisation (ISO) standards.

### 7.2 Relevant impacts under the EPBC Act

7.2.1 Impacts of the proposal on the controlling provisions for the action under the EPBC Act (listed threatened species and ecological communities, listed migratory species, listed marine species and the environment in the Commonwealth marine area), must be addressed, in accordance with Appendix B.

### 7.3 Performance standards/criteria

7.3.1 Performance standards required by the Tasmanian and Australian governments should be identified and evidence provided to demonstrate that these can be complied with. These must include the requirements in the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*, and any statutory Tasmanian requirements.

7.3.2 As the proposal must be assessed in the context of the sustainable development objectives contained in Schedule 1 of the *State Policies and Projects Act 1993* (Appendix A), specific attention must be paid, as appropriate, to demonstrating that the project is consistent with these objectives.

7.3.4 Compliance with any relevant provisions of the *Public Health Act 1997* or associated Guidelines issued by the Director of Public Health.

7.3.5 Compliance to the extent necessary with ISO 9000 and ISO 14000 series and British Standard BS 7750 should be demonstrated.

### 7.4 Waste reduction

7.4.1 For each waste (e.g. gaseous, liquid or solid) produced as a result of the project, it must be demonstrated that all practicable measures have been taken to avoid producing the waste, or minimise the amount of waste which must be disposed of consistent with the waste management hierarchy:

- (1) avoidance (including optimal use of pulp grade materials);
- (2) reuse;
- (3) recycling;
- (4) recovery of energy;
- (5) treatment;

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(6) containment; and

(7) disposal.

7.4.2 Alternatives to waste disposal for each waste stream, such as recycling, must be discussed and examined.

### 7.5 Measures to control impacts

7.5.1 Where environmental or health risks and impacts are unavoidable, the proposed safeguards, e.g. emission controls etc. should be described in detail and should indicate the extent to which they will overcome the anticipated risks and impacts. Details of proposed monitoring programs must be provided and cross-referenced to chapter 10, 'Monitoring'.

7.5.2 Where measures to control risks and impacts are necessary, but are not the responsibility of the proponent, this should be indicated together with any information regarding the commitment by the responsible party to implement the measures. Any influence the proponent may bring to bear to ensure that the necessary measures are put in place should be identified. This should include but not be limited to:

- noise attenuation, including requirements for night-time curfews of heavy vehicles and rail traffic travelling through residential areas where transport activities are increased due to the construction or operation of the mill;
- noise attenuation of energy and other infrastructure;
- environmental and public health impacts of the collection, treatment or supply of water and associated works; and
- environmental impacts of any facility or infrastructure on or off the mill site.
- ground vibration attenuation.

### 7.6 Contingencies

7.6.1 Where pollution control equipment, treatment processes and, or, infrastructure (such as the marine outfall) are key factors in achieving satisfactory environmental performance, contingencies in the event of breakdown or malfunction of the equipment or processes must be discussed. Planned maintenance of pollution control equipment must be provided for without causing emission limits to be exceeded.

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**7.7 Health impact assessment**

7.7.1 Throughout this guideline, reference is made to a number of issues that potentially impact on or have relevance to human health. Wherever relevant, the IIS should include a review and evaluation of the potential effects of the project on the health of persons, including those working at the mill, and those living, working and travelling in the vicinity of the mill (as defined in section 6.1 above). Particular emphasis should be placed on health problems which have previously been associated with developments of this type, and include an assessment of their likely association with the processes and technologies proposed for this project.

The proponent should:

- (1) Identify existing and potential health impacts of new or altered developments, including ECF and TCF bleaching operations or similar;
- (2) Identify additional discharges to the atmosphere of emissions from the mill and changes to ground level concentrations of pollutants and their effect on public health;
- (3) Identify mechanisms which will prevent negative health impacts, and promote positive health impacts of the development; and
- (4) Provide sufficient information to decision-making authorities and the public for them to make an accurate assessment of the health impacts of the development.

The enHealth Council documents: “Health Impact Assessment Guidelines (September 2001)” and “Environmental Health Risk Assessment – *Guidelines for assessing human health risks from environmental hazards* (June 2002)” provide an appropriate framework to assist the proponent. The Health Impact Assessment Guidelines provide a systematic approach for characterising the nature and magnitude of the risks associated with environmental health hazards

**7.8 Emissions from the pulp mill and on-site environmental management issues**

**7.8.1 Wastewater emissions**

This section should discuss the net impact of effluent from the mill on the receiving waters in Bass Strait, including Commonwealth waters and the Tamar River estuary. The analysis should take account of existing water quality in the receiving environment in the water column and sediment quality on the sea floor as discussed in the chapter on the ‘Existing Environment’ and an analysis and critique of wastewater disposal alternatives such as land disposal. The following information must be provided.

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- (1) All major sources of liquid effluents must be identified and effluent characterised and the pollutant loadings (mass flows and concentrations) contributed by each source determined (cross-reference to chapter on 'Project Description').
- (2) The characteristics of the final mill effluent following treatment (volume, temperature, density, colour, pollutant concentrations and masses for example) must be predicted, and compared with required performance standards.
- (3) The location, distance from the shore and depth of any pipeline and outfall must be specified and mapped.
- (4) The initial dilution of the effluent and its subsequent dispersion and the fate of key pollutants must be predicted. The ability to comply with proposed mixing zones must be addressed. Predicted ambient levels of pollutants must be compared with required performance standards. Predictions must be based on modelling using adequate data as set out in the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*. The maximum concentration level of each pollutant should be given (as required by the National Pollutant Inventory).
- (5) The potential for the effluent to cause environmental and health impacts must be evaluated. This should include consideration of normal operating conditions and periods when pollution control equipment may fail or be shut-down. The management actions to minimise the pollutant concentrations and load discharged must be included in any discussion regarding any discharge of non-compliant effluent quality. The likelihood and frequency of shutdown/failure of key items of pollution equipment must be estimated. The review of potential impacts must include:
  - the potential for the deposition of suspended solids and the accumulation of pollutants on the sea floor (deposition zones) or on river beds within the proposed mixing zone, zone of influence and the Tamar River estuary;
  - possible impacts on the survival, breeding, and migration of marine mammals, birds, fish (including marine reptiles, invertebrates and marine plants) and other aquatic wildlife with particular reference to commercial, recreational fish and EPBC listed threatened and marine species. This must include information on the predicted toxicity and mutagenicity, including teratogenic effects, of the combined final effluent from the mill. Long term acute and chronic impacts should be discussed. (Refer to effluent toxicity testing as required in the Tasmanian Government 2004, *Environmental emission*

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*limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*). Consideration must be given to potential cumulative, antagonistic and synergistic effects of pollutants when combined with other pollutants or chemicals in the receiving environment;

- potential impacts on EPBC Act listed marine species and listed migratory marine species found in the area, as well as the environment as a whole;
- the potential for persistent organic pollutants<sup>6</sup> and any other pollutants to bio-accumulate and bio-magnify in marine organisms and the marine food-chain, with specific reference to any threat to human health or the commercial acceptance of marine products;
- a review of the best available information on diseases or other health impacts which might result from cumulative, direct or indirect exposures to pollutants in the effluent, and the potential for such impacts to occur;
- demonstrate that the project is consistent with the objectives and requirements of the *Living Marine Resources Management Act 1995*, the *Environmental Management and Pollution Control Act 1994* and the *Tasmanian State Coastal Policy 1996*;
- potential impacts on recreational and commercial fishing activities including aquaculture operations;
- potential impacts on marine navigation, access and anchoring of vessels;
- an analysis of if and how the treatment and disposal of wastewaters might affect populations of pests or disease vectors, and the health implications of any such effect; and
- demonstrate that the project is consistent with the objectives and requirements of the *Water Management Act 1999* and the *State Policy on Water Quality Management 1997* with respect to surface and groundwater; ensuring the protection of the quality and quantity of the region's surface and groundwater resources, and maintenance of the beneficial use of surface and groundwater and its quality to ensure ecosystem maintenance.

(6) Details of the following must be included:

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<sup>6</sup> Refer to Annex C, Stockholm Convention on Persistent Organic Pollutants 2001

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- collection, treatment, disposal and impact of effluent from log-washing (if relevant);
  - collection, treatment, disposal and impact of stormwater and firewater runoff on the downstream catchment including the marine environment if relevant;
  - sewage treatment, disposal and impact on receiving waters including the marine environment;
  - back up systems in the event of failure; and
- (7) Assessment of the impact of tree age and species (hardwood and softwood) on the overall levels of effluent emissions and composition and variance over time.

### 7.8.2 Atmospheric emissions

This section should discuss the net impact of the mill on the local and regional airshed (as defined in section 6.1 above). The analysis should take account of existing levels of pollutants in these airsheds and existing ground level concentrations as discussed in the chapter on the 'Existing Environment'. The following information must be included.

- (1) All sources of emissions including steam plumes must be identified and the pollutant loadings in each stream before treatment must be stated, including temporal variation (diurnal, seasonal) and expected average and maximum emissions (cross-reference to the chapter 'Project Description').
- (2) The gas volume, composition and particle size distribution, including velocity, temperature and pollutant concentrations and mass emission rates (in g/s) for each source at the point of discharge must be described (cross-reference to the chapter 'Project Description') and compared with performance requirements. This should also include the discharge pattern i.e. normal, startup/shutdown, diurnal variation, seasonal variation, production dependence. For each source location (in map coordinates), height and diameter of chimney stacks and vents from which the emission will occur must be given (in accordance with the principle set out in D.3.11 of the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*).
- (3) Provide details of the number of anticipated odour emissions from the proposed pulp mill during normal operation and maintenance cycles per annum, particularly the number of anticipated fugitive emissions. Potential sources of fugitive emissions must be identified and measures proposed to reduce them to a minimum, particularly with respect to facilities for

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collection and storage of foul kraft condensates, evaporation of black liquor and generation of sulfate turpentine, 'red oil'<sup>7</sup>, tall oil and, or, contaminated kraft 'soaps'. Provide estimates of the quantities of each pollutant for each type of identified fugitive emission and the management practices that are proposed to minimise these emissions.

- (4) The measures to be taken to control the level of emissions from burning bark and other wood wastes shall be outlined.
- (5) Ambient ground level concentrations of gaseous pollutants, including odours, must be estimated under normal and worst case dispersion scenarios, and compared with performance requirements. Ground level pollutant concentration calculations must be supported by a technical appraisal of the effect of local topographical and meteorological conditions on dispersal. The calculations should be based on prognostic atmospheric dispersion modelling, such as TAPM<sup>8</sup>, which takes into account topography, three-dimensional time and space varying meteorological fields, plume transformation, and building downwash. Modelling should be conducted by a consultant with wide experience in the use of prognostic models. The modelling should be based on meteorological data collected over a twelve month period as required by the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*. The temporal scale of the ambient ground level concentrations of gaseous pollutants should be specified, e.g. 3-minute average, hourly, daily, monthly etc. The air model used must have the capacity to take into consideration complex topographies, inversion layer presence and current airshed pollution effects and capacity with respect to National Environment Protection Standards for Air Quality, defined in Part 3 National Environment Protection (Ambient Air Quality) Measure as amended 2003. The aerial extent of the model must embrace the point where pollutant effects are negligible relative to background levels. Modelling should include normal and worst case.

All configuration 'default' files, input files (such as source characterisation files; the vegetation and land-use file; and the soil file), and output files, (such as the meteorological and pollution files), are to be made available to the regulator in electronic form to facilitate detailed review and possible replication of the dispersion modelling.

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<sup>7</sup> 'Red oil' is a complex mixture of liquid distillation products produced when black liquor from softwoods is concentrated from 67% solids and 33% water to 75% solids and 25% water.

<sup>8</sup> Unless it can be demonstrated that another atmospheric dispersion model is more suitable.

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- (6) The effect of atmospheric emissions, including odours, on surrounding populations, land uses and environmental values must be reviewed. This must include consideration of normal operating conditions and during periods when pollution control equipment may be shut-down or fail. The likelihood and frequency of shutdown/failure of key items of pollution equipment must be estimated and operating plans prepared showing actions to be taken in the event of shutdown, emergency and plant failure.

Any foreseeable variations in emissions generated during the start-up phase should be identified and any temporary mitigation requirements specified.

- (7) Reference should be made to the ground level concentrations of key pollutants (including persistent organic pollutants<sup>9</sup>) relative to reported thresholds for human health effects, nuisance, and damage to vegetation. The potential for pollutants (including persistent organic pollutants) emitted from the mill to accumulate in soils, vegetation and water resources (including rivers, streams, estuaries, lakes, reservoirs, Bass Strait and groundwater) must be addressed. The additive effect to current ground level pollutant concentrations needs to be specifically detailed.
- (8) A review of the best available information on diseases or other health impacts which might result from cumulative, direct or indirect exposures to pollutants in the atmospheric emission, and the potential for such impacts to occur, with reference to any subpopulations that may be more sensitive than might otherwise be expected.
- (9) The visual appearance of any plumes may be dealt with here or in the section on visual impact.
- (10) The effect of steam plumes on the frequency of occurrence on fog events and the impacts on roads in the vicinity is to be detailed.
- (11) Publish written advice from internationally recognised consultants in the pulp and paper industry on the load of particulates less than 10 micron (PM<sub>10</sub>) in the recovery boiler, power boiler and lime kiln achievable by employing accepted modern technology (AMT). Modelling of the dispersion of this load of particulate matter using 'The Air Pollution Model' (TAPM) shall be conducted. With respect to particulate matter, the ambient air quality criterion to be achieved should be the NEPM value of 50 microgram per normal dry cubic metre on the basis of measurement specified in the Tasmanian *Environment Protection Policy (Air Quality) 2004*,

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<sup>9</sup> Refer to Annex C, Stockholm Convention on Persistent Organic Pollutants 2001

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unless the present air quality study to be conducted at Long Reach shows this level is already exceeded. In that case the criterion shall become the regulatory authority's set value of 150 microgram per normal dry cubic metre on the same basis of measurement.

Publish written advice on the estimated load of PM<sub>2.5</sub> from the power boiler, recovery boiler, lime kiln and concentrated non-condensable gas incinerator(s) at the proposed mill.

*Note:* In the event that the Australian Government or Tasmanian Government publish regulations covering particulates less than 2.5 micron (PM<sub>2.5</sub>), the proponent shall be required to install equipment to measure these data in the mill emissions to air from the power boiler, the recovery boiler, the lime kiln and the concentrated non-condensable gas incinerator(s) and, in the event that emission loadings exceed regulatory limits, the proponent shall be required to undertake a review of AMT available at the time the regulations come into force and to publish the findings of the review. The proponent will be required to incorporate updated AMT to control PM<sub>2.5</sub> to regulatory levels or below within a timeframe to be agreed in good faith with the regulatory authority from time to time.

**7.8.3 Noise emissions and ground vibration**

- (1) The level of noise emissions and ground vibration from the total mill complex must be estimated at the boundary of land owned or controlled by the proponent, and at the curtilage of the nearest residences, or other noise-sensitive land uses (schools, nursing homes etc.), or the boundary of areas intended for these uses, outside this boundary. Normal and worst case meteorological conditions should be taken into account, and the frequency of worst case conditions estimated. The time of day of occurrence of worst case conditions must be detailed. The estimations are to be based on the sound emissions data provided in 4.3.1(14) and an accepted environmental noise prediction calculation method. The results should be presented as both predictions at specific boundary and noise-sensitive locations and as sound pressure level contours in the vicinity on the mill. Noise levels should be adjusted for intrusive or dominant characteristics (tonality, impulsiveness, modulation and low frequency), and the contributions from the major noise sources should be ranked at the specific receptor locations.
- (2) The predicted emission levels should be compared with existing noise levels (cross-reference to the chapter 'Existing Environment') and the potential for emissions from the mill complex to cause nuisance must be discussed. The assessment of potential nuisance must take into account:

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- increases in noise levels and/or changes to the statistical distribution of noise levels;
  - increases in ground vibration;
  - changes in noise characteristics, including tonality, impulsiveness, modulation and low frequency components;
  - the generation of narrow-band tonal components;
  - the variation of noise with time of the day and day of the week;
  - implications of the predicted noise levels and characteristics including any effects on nearby land uses and any appropriate changes or exclusions of particular land uses in the vicinity of the mill; and
  - the likely influence of meteorological conditions and variations of these conditions typical of the mill locality on the spatial and temporal variations of sound pressure levels.
- (3) The potential for noise emissions from the mill to affect human health, including auditory and non-auditory health impacts, should be reviewed and evaluated.
- (4) The potential for noise emissions from the mill to affect listed threatened fauna species under the relevant Schedules of the EPBC Act, including the Spotted-tailed Quoll (*Dasyurus maculatus maculatus*), Eastern Barred Bandicoot (*Perameles gunii gunnii*), the Tasmanian subspecies of Wedge-tailed Eagle (*Aquila audax fleayi*), Swift Parrot (*Lathamus discolor*), Tasmanian Giant Freshwater Lobster (*Astacopsis gouldi*), Australian Grayling (*Prototroctes maraena*), Green and Gold Frog (*Litoria raniformis*) and listed marine species, should be reviewed and evaluated. Details of proposed mitigation measures consistent with the objectives of any recovery plans in place for listed EPBC Act species should be discussed.

Note: Reference to particular listed species does not exclude additional species. Any listed species that may be impacted by the proposal must be considered.

- (5) The potential for noise emissions from the mill to affect listed threatened fauna species under the *Threatened Species Protection Act 1995*. Details of proposed mitigation measures consistent with the objectives of any recovery plans in place for listed species should be discussed.
- (6) Any foreseeable variations in noise emissions generated during the start-up phase should be identified and any temporary mitigation requirements specified.

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- (7) Noise emissions and ground vibrations from wood chipping facilities at Long Reach arising as a consequence of the proposed pulp mill. Measures to avoid, manage and mitigate noise emissions and ground vibrations must be described.

**7.8.4 Light emissions**

- (1) Light emissions from the total mill complex must be estimated at the boundary of land owned or controlled by the proponent, and its potential to cause nuisance.
- (2) Describe the potential for light emissions from off-site infrastructure to affect fauna, particularly nocturnal fauna, and migratory birds.
- (3) Measures to avoid, manage and mitigate light emissions must be described.

**7.8.5 Solid waste and hazardous waste management**

- (1) Identify the sources, nature and quantities of all solid wastes likely to be generated - dust, smelt, sludge, fly ash, bark and woodwaste etc. and any Controlled Wastes which will be collected and disposed of separately from wastewater streams e.g. drummed liquid wastes etc.
- (2) Any Controlled Wastes, as defined in the *Environmental Management and Pollution Control Act 1994*, or in the 'National Guidelines for the Management of Hazardous Wastes', that will be generated must be identified. The quantities, method of storage and disposal of each such waste must be described. The *Environmental Management and Pollution Control Regulations (Waste Management) 2000* prohibit the disposal, treatment, etc of Controlled Waste without approval. Where there is uncertainty as to the classification of a waste, analysis of the material for comparison to the limits set out in Table 2 of Bulletin 105: *Classification and Management of Contaminated Soil for Disposal*, February 2004, Department of Primary Industries, Water and Environment, may be required.
- (3) Specify the method of collection, storage, reuse, treatment or disposal of each type of waste - e.g. use as boiler feed, landfill, etc.
- (4) The nature and quantities of the materials requiring treatment or disposal must be given. If final use/disposal will be off-site then reference should be made to section 7.8.4 where management of waste disposal sites is required.
- (5) The potential for human health to be affected by solid wastes from the mill, during handling transport or as a result of disposal, including groundwater impact and future site use, should be reviewed and evaluated.

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- (6) Any foreseeable variations in waste generated during the start-up phase should be identified and any temporary storage requirements specified

**7.8.6 Hazardous materials**

- (1) Hazardous materials, as defined in section 1.1.3 of the 'Australian Code for the Transport of Dangerous Goods by Road and Rail' to be used at the mill and the approximate quantities to be used and stored on site must be identified.
- (2) Describe the means to achieve safe transport and storage of hazardous materials, including compliance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, the *Dangerous Goods Act 1998*, and the *Dangerous Goods (General) Regulations 1998*.
- (3) A plan must be prepared as part of the commissioning program identifying the actions to be taken in the event of a transport or storage emergency relating to hazardous materials and be approved, in place and operational, prior to fullscale operations commencing.

**7.8.7 Hazard analysis and risk assessment**

- (1) A preliminary hazard analysis (HAZAN) study shall form part of the IIS and a hazard and operability study (HAZOP) shall be conducted prior to the commencement of operations. These studies should consider the risk to people and the environment including the marine environment. A quantified risk assessment should be conducted if the preliminary hazard analysis indicates that hazards above the acceptable criteria, which should reflect best practice environmental management (BPEM), may extend beyond the site boundaries. Any risk assessment must be consistent with the Australian Standard on Risk Management [AS/NZS 4360:2004] which provides a generic guide for the establishment and implementation of the risk management process involving the identification, analysis, assessment, treatment and ongoing monitoring of risks. The risk assessment must also be consistent with the enHealth Council document "Environmental Health Risk Assessment – *Guidelines for assessing human health risks from environmental hazards* (June 2002)".

The studies should also take account of the requirements of the National Standard for Plant [NOHSC:1010 (1994)] and be guided by the Control of Major Hazard Facilities National Standard [NOHSC:1014(2002)] (MHF Standard) and National Code of Practice [NOHSC:2016 (1996)] . Based on the study outcomes the need for a safety report under section 7 of the National Standard for the Control of Major Hazard Facilities, must be identified and a timeframe for provision of the report during the construction phase.

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- (2) The extent of information required to assess the land use safety issues associated with developments or activities which may have the potential for significant offsite safety and environmental impacts in each case will depend on the location of the development, the processes and materials involved and proposed safety management systems.
- The information should be presented clearly, in a manner which is easily understood by people without technical training in the field i.e in a clear, uncluttered format, supported by maps, flowcharts, diagrams and other descriptive detail as appropriate. All uncommon technical terms must be explained in plain English for the non-technical reader.
  - A preliminary HAZAN, HAZOP study and, if required, the quantified risk assessment must be based on known technology. Where a small portion of the technology is unknown, this must be replaced with known technology for similar unit operations and the assessment undertaken for a notional plant.
  - A staged assessment of the hazards and risks posed by a development must be prepared. Sufficient information must be provided to satisfy the approval authority that all major hazards have been identified and that a preliminary assessment indicates that these can be adequately addressed.

Note: An on-site emergency plan and an incident management plan in line with the requirements detailed in section 9 of the National Standard for the Control of Major Hazard Facilities, would be a condition of any operating permit, to be prepared prior to the commencement of commissioning.

An emergency/preparedness program and incident management plan would also be a condition of any operating permit, to be prepared prior to the commencement of commissioning.

Workplace Safety Tasmania must be given 14 days notice before commissioning is commenced.

A Fire Management and Response Plan would also be a condition of any operating permit.

*The following information must be provided in the Land-Use Safety Assessment*

- (3) Background information

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- The location of the proposed works: detailed layout map of the site(s), including the suitability of the site from a land stability perspective and any details of measures that are additional to the requirements of building and construction codes to ensure land stability, complete with planned internal and adjacent roading, rail, port and other transportation infrastructure.
  - Details of the storage, manufacture and processing of hazardous materials: the layout, number, types (design and materials) and volumes of storage vessels for all hazardous materials to be stored both on and off site. These details can be overlaid onto site plans.
  - The maximum likely static storage inventories of each hazardous material shall be depicted.
  - The maximum in-process inventories of hazardous materials (raw materials, intermediate products, by-products and final products) shall be given.
  - The waste streams (liquid, gaseous and solid waste stream routes and mass flows from all parts of the processing plant and storage areas) must be clearly depicted on an environmental emission (EE) diagram.
  - The nature, types, storage and location of hazardous wastes shall be given.
- (4) Transportation of hazardous materials
- Route maps for the transportation of hazardous materials to and from the proposed facilities must be provided.
  - Sensitive land uses along the proposed transport routes must be identified and the likely consequences, in the event of accidental discharges, for human health and safety, and the environment, should be clearly stated.
  - The nature, numbers and capacities of road trucks/rail cars/marine vessels must be detailed in the submission.
  - Details of the times during which transport will occur must be given.
- (5) Preliminary hazard analysis
- A comprehensive identification of possible sources and causes of potentially hazardous events should be provided.

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- The likely consequences for off-site human health and safety and the environment including the marine environment must be clearly explained for all explosion, fire, and toxic releases to the environment, together with the probability or likelihood of these events occurring.
  - The routes by which accidentally released materials may enter the food chain, and the human exposure paths for identified substances must be clearly defined.
- (6) Selection of credible accident events for further analysis if required (See section 7.7.6 (1):
- Undertake a full, quantified risk assessment for consequences outside the perimeter of the premises for credible accident events.
  - Demonstrate, through rigorous risk estimation techniques approved by the consent authority, the predicted risk (calculated number of occurrences per million per year) of human (individual) fatality, injury, property damage and ecological damage (injury or death of native flora and fauna, ecosystem dysfunction, tainting of commercial stocks of organisms) caused through the accidental release of hazardous materials and energy.
  - Risk contour maps for the locality should be provided at a sufficient scale to enable the identification of individual houses.
  - Credible accident events include fires, discharge pipeline ruptures, shipping accidents, explosions and toxic gas releases which have the potential to significantly impact the environment surrounding the premises. (The responsible authority should be consulted on the criteria for determining what constitutes a credible accident event based on a review of the proposed installations and activities.)

Note: A comprehensive safety management system, which is consistent with relevant Australian Standards, would be a condition of any operating permit. The proponent will be required to commit to designing and implementing a safety management system prior to commencement of construction.

#### 7.8.8 Occupational health and safety issues

Demonstrate that occupational health and safety issues have been taken account of in planning of the proposal, including the analysis of alternatives, and that compliance with the *Workplace Health and Safety Act 1995* will be achieved. The proponent will be required to demonstrate that it has designed and will put in

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place a comprehensive Safety Management System that complies with the relevant Australian Standards. In particular, any occupational health and safety risks which are known to be specifically associated with the wood processing and pulp production industries should be identified and measures to address these risks described. This should include an analysis of the risks which may arise from the handling of materials used in the production process, products etc.

### 7.8.9 Visual impact

The visual impact assessment is to take account of the appearance of the mill complex from significant vantage points including major roads, roads with tourism significance, residential areas, the Tamar River, places on the Register of the National Estate and tourist attractions, and how this might impact on the visual amenity of the area. Measures to avoid, manage and mitigate potential visual impacts are to be identified. The assessment is to describe clearly the methodology, assumptions and terminology used.

### 7.8.10 Constraints on surrounding land use

- (1) The effect of the project in terms of any constraints it may place on the existing and future use of surrounding land (i.e. outside the land controlled by the mill operators) including but not limited to tourism, agricultural industries and recreation uses and use of the marine environment must be discussed. The extent of any limitations due to public health and safety risks and noise from the mill complex must be specifically addressed.
- (2) Attenuation (or buffer) areas must be depicted for the subject site to indicate areas which may be detrimentally affected in terms of health, safety or amenity due to the influence of the project. Demonstrate that potentially incompatible use and development has been identified and prevented from locating within attenuation areas.

## 7.9 Off-site facilities and infrastructure development and use

### 7.9.1 General

- (1) The purpose of this section is to review the potential environmental effects of any significant off-site or infrastructure developments (including increased use of existing infrastructure), such as wood chipping facilities and expansion of wood chip stock piles. Safeguards to prevent or limit the impacts must be described and reference made to the information on controls to be implemented by parties other than the proponent in the introduction to this chapter.
- (2) Further requirements may be specified once the nature and location of facilities and infrastructure required for the project has been determined.

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- (3) Impacts associated with the following developments must be specifically addressed:

7.9.2 Water supply and associated infrastructure

- (1) The quantity of water required to support the various aspects of the mill operations, and the arrangements for supplying this must be reviewed (cross-reference to 'Project Description') including the capacity for treatment and internal or external re-use.
- (2) The impacts associated with the supply of water to the mill must be reviewed. These impacts considered must include the following.
  - The impact of the additional water abstraction from all direct and indirect sources on other users (existing industrial users, recreational fishing, recreational water uses, commercial fishing, water dependent species and ecosystems, habitat for listed EPBC Act species, irrigation, public drinking water, private supplies etc) should be reviewed. The proponent must consult with the relevant State and Australian Government authorities as necessary to identify the water regime considered necessary to protect water dependant ecosystems (including estuaries and riparian vegetation) downstream from the point of abstraction, and demonstrate how such flows will be maintained.

Any review of impacts on water dependant ecosystems associated with the supply of water to the mill should consider the ecological and conservation values associated with those ecosystems. Ecosystem values in the CFEVP (Conservation of Freshwater Ecosystems Values Project) should be used as an initial guide for the identification of relevant water dependant ecosystems with high management priority.

Any investigation into the water regime required to protect these ecosystems should consider these values and management priorities.

- The impact of providing any new water supply infrastructure (pipelines, dams, weirs etc) must be reviewed against habitats for EPBC Act listed species, including noise effects, and impacts, upon surrounding ecosystems. Provide details of proposed mitigation measures, demonstrating consistency with the objectives of any recovery plans in place for the EPBC Act listed species.
- The impact of providing any new water supply infrastructure (pipelines, dams, weirs etc) must be discussed including the extent of compliance with relevant Australian Government and Tasmanian

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legislation, including the *Water Management Act 1999*, the *Environmental Management and Pollution Control Act 1994*, the *Threatened Species Protection Act 1995*, the *Inland Fisheries Act 1995*, the *State Policy on Water Quality Management 1997* and the EPBC Act.

- Any health impacts which may stem from the supply of water to the mill.
- (3) When assessing the instream flow requirements and operating rules for water abstraction, the proponent shall take account of the “Australian Water Quality Guidelines for Fresh and Marine Waters”, National Principles for the Provision of Water for Ecosystems 1996, produced by Australian and New Zealand Environment and Conservation Council (ANZECC) and Agricultural and Resource Management Council of Australia and New Zealand (ARMCANZ), 2000, the *State Policy on Water Quality Management 1997* and the *Water Management Act 1999*.
  - (4) Describe the alternative water supply options in the event that water supply is delayed for more than three days from the proposed primary water supply and the proposed supplementary water storage.

**7.9.3 Raw water pump station, water storage dam and water supply pipelines**

- (1) Discuss the likely impacts, both temporary (during construction) and permanent, which will result from the installation and use of a raw water pump station and pipeline conveying water from the pump station to the proposed pulp mill site. This must include a description of the site preparation works, methods used to bury the pipeline, consideration of maintenance requirements, rehabilitation plans, and contingency measures in the case of pipe breakage or leaks. Describe the impacts upon species listed in the EPBC Act and in the *Threatened Species Protection Act 1995* and the proposed mitigation measures.
- (2) Discuss the likely impacts, both temporary (during construction) and permanent, which will result from the construction and use of a water storage dam and pipeline conveying water from the dam to the proposed pulp mill site. This must include a description of the site preparation works, safety hazard assessment and relevant engineering requirements for the proposed dam, methods used to bury the pipeline, consideration of maintenance requirements, rehabilitation plans, and contingency measures in the case of pipe breakage or leaks. Describe the impacts upon species listed in the EPBC Act and in the *Threatened Species Protection Act 1995* and the proposed mitigation measures.
- (3) Discuss the likely impacts, both temporary (during construction) and permanent, which will result from the development and use of a water

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supply system from Curries River Dam and pipeline conveying water from the mill to the Esk Water treatment plant. This must include a description of the site preparation works, methods used to bury the pipeline, consideration of maintenance requirements, rehabilitation plans, and contingency measures in the case of pipe breakage or leaks. Describe the impacts upon species listed in the EPBC Act and in the *Threatened Species Protection Act 1995* and the proposed mitigation measures.

**7.9.4 Pipeline to convey effluent to the marine outfall, and construction of the marine outfall**

Discuss the likely impacts, both temporary (during construction), and permanent which will result from the installation and use of the pipeline. This must include a description of the site preparation works, methods used to bury or anchor pipeline and outfall to the seabed, consideration of maintenance requirements, rehabilitation plans, and contingency measures in the case of pipe breakage or leaks. Describe the impacts upon listed *Threatened Species Protection Act 1995* species and EPBC Act species and the proposed mitigation measures.

**7.9.5 Solid waste disposal site(s)**

If a dedicated off-mill disposal site to receive solid wastes is required then the following information must be supplied (cross-reference to 'Project Description' for site location etc):

- (1) A description of the site preparation works required to establish the facility, and the control of emissions resulting from these works.
- (2) The measures, both in terms of the design of the facility and management prescriptions, to control, avoid, manage and mitigate:
  - leachate (to surface waters, groundwater and marine waters). A description of the pollutants, concentrations etc. likely to be contained in leachate should be included;
  - odour;
  - dust and litter;
  - pests; and
  - firesshould be given.
- (3) The life of the proposed facility should be estimated and an indicative final rehabilitation strategy should be presented.

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- (4) It must be demonstrated that the facility will be sited, designed, operated and rehabilitated in a manner consistent with the *Landfill Sustainability Guide 2004*, published by the Department of Primary Industries, Water and Environment, Hobart.
- (5) Identify potential impacts on biodiversity and conservation values, from the operation and use of the solid waste site. Issues that must be addressed include:
  - Effects on flora and fauna, with particular reference to threatened species, communities and habitats, including those listed under the *Tasmanian Threatened Species Protection Act 1995*.
  - Effects on listed threatened species and communities under the relevant Schedules of the EPBC Act, including the Spotted-tailed Quoll (*Dasyurus maculatus maculatus*), Eastern Barred Bandicoot (*Perameles gunnii gunnii*), Tailed Spider-Orchid (*Caladenia caudata*), the Tasmanian subspecies of Wedge-tailed Eagle (*Aquila audax fleayi*), Swift Parrot (*Lathamus discolor*), South Esk Heath (*Epacris exserta*), Shiny Grass Tree (*Xanthorrhoea bracteata*), Tasmanian Giant Freshwater Lobster (*Astacopsis gouldi*), Australian Grayling (*Prototroctes maraena*) and Green and Gold Frog (*Litoria raniformis*).
  - Note: Reference to particular listed species does not exclude additional species. Any listed species that may be impacted by the proposal must be considered.
  - Effects on listed migratory species under the EPBC Act.
  - Effects on identified areas or habitats of conservation significance, including designated conservation areas, areas relating to the requirements of international treaties or significant wetlands.
  - Effects on sites of geoconservation significance or natural processes (such as fluvial or coastal features), including sites of geoconservation significance listed on the Tasmanian Geoconservation Database.
  - Effects on existing formal and informal reserves which may be affected by the solid waste site.
  - The potential for migration and/or introduction of pests, weeds and plant and animal diseases, particularly *Phytophthora cinnamomi*, as a result of the solid waste site.
  - Reference should be made to potential effects of vehicle movements on wildlife as a result of the solid waste site, and to proposed mitigation measures for any wildlife priority areas.

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- Measures to avoid, manage and mitigate impacts must be described.

#### 7.9.6 Transport of materials to and from the mill

This section should firstly describe existing road and traffic conditions surrounding the pulp mill site (cross-reference to 'Existing Conditions'). It should then identify the roads to be used by vehicles required for each activity of the pulp mill (construction, ongoing operation and maintenance) and the likely volume and nature of traffic and timing of traffic flows.

It should then evaluate the potential for impacts due to pulp mill traffic, including noise, safety and congestion, and the effect on road pavements. Noise emissions from freight vehicles and vessels related to mill inputs and outputs and production of materials for processing should be evaluated with particular reference to night time noise disturbance and the routing of such vehicles through residential areas. Measures to limit impacts to acceptable limits should be described. Finally, the overall road and traffic impacts following the implementation of the proposed avoidance, management and mitigation measures should be described.

The extent to which the proposal can meet all aspects of the following should be described for all relevant transport modes:

- (a) *Traffic Act 1925* and related requirements
- (b) Works in State road reservations  
*Roads and Jetties Act 1935*, section 16.
- (c) Drainage of land abutting State roads  
*Roads and Jetties Act 1935*, section 17B and 17C.
- (d) Access to limited access roads  
*Roads and Jetties Act 1935*, Part IVA.
- (e) *Local Government (Highways) Act 1982* and related requirements on local government roads similar to the provisions in (b) to (d) for State roads above where changes to current traffic patterns occur due to the pulp mill.
  - (1) Road transport
    - Changes in heavy and light vehicle movements on roads in the vicinity of the mill, including the times of the day when the changes will occur, must be identified. Any significant changes in heavy vehicle movements on routes more removed from the

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mill should be highlighted (cross-reference to 'Project Description').

- The potential environmental and health impacts which might arise from changes in the nature, volume and time of traffic movements as a result of the project must be reviewed and assessed. These must include noise, air pollution, safety, congestion, damage to roads, impacts on national estate or areas of heritage value and effect on tourism of heavy vehicle movements associated with the mill. Strategies designed to reduce noise, air pollution, safety (such as cycle and pedestrian protection measures), road damage and tourism impacts also should be outlined and assessed. Particular attention must be paid to the effects of traffic in sensitive areas such as residential areas, schools, hospitals, nursing homes etc. In addition, the impact of road damage attributable to the mill operations and any need to bring forward state and local government road reconstruction programs as a consequence of that damage must be identified.
- Any new roading required (e.g. dedicated haul road) must be described, means of providing the route outlined, vehicle use estimated (cross-reference to 'Project Description') and the impacts reviewed. The issues of surface water and groundwater pollution, noise, alienation of agricultural land, potential for nuisance impact and severance of properties must be canvassed in this context.
- Describe and address any issues and implications for road transport (including State and Local Government roads) in the event that:
  - (i) the existing rail network is not available for use; and
  - (ii) no additional rail infrastructure will be provided.

(2) Rail

- Changes in the extent of use of the existing rail network, and likely environmental impacts, e.g. noise emissions, must be described and the potential for nuisance impact evaluated.
- If a new rail link is proposed, the frequency and timing of train movements must be given, and the likely environmental effects discussed. The issues of surface water and groundwater

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pollution, noise, alienation of agricultural land and severance of properties must be canvassed and evaluated in this context.

(3) Sea

- The potential for shipping movements associated with the project to introduce or translocate marine organisms in ballast or as hull fouling should be evaluated, and, control strategies developed. These strategies should be consistent with port management plans, and arrangements under the National System for the Prevention and Management of Marine Pest Incursions that are being developed by the National Introduced Marine Pest Coordination Group (NIMPCG), and in accordance with the *Pollution of Waters by Oil and Noxious Substances Act 1987*.
- The arrangements should adhere to the AQIS Ballast Water Management Requirements for international vessels and be consistent with the IMO Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004.

7.9.7 Energy supply

- (1) The environmental effects of any new or alteration to power supply infrastructure (transmission lines, pipelines, etc) required specifically as a result of this project must be reviewed and evaluated including impacts on places entered in the Register of the National Estate or of heritage value. If natural gas, oil (new or used/recycled) or coal is to be used any environmental effects of new infrastructure must also be reviewed.
- For electricity infrastructure, all provisions of the following legislation must be met:
    - *Electricity Supply Industry Act 1995;*
    - *Energy Co-ordination and Planning Act 1995;*
    - *Electricity Supply Industry Restructuring (Savings and Transitional Provision) Act 1995;* and
    - *Gas Act 2000.*
  - Where generation, transmission or distribution licences are required, information to be supplied includes the following:
    - details of the generation plant or proposed plant;

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- identification of the network to which the generation plant is to be connected;
- details of how the connection is to be made;
- details of the quality of electricity supply from the generator;

#### 7.9.8 Port facilities/storage

The level of detail required will depend on the nature of the development. The effects, including impacts on coastal landforms, marine, freshwater and terrestrial habitats and communities, of any major developments must be reviewed and evaluated. Details of any ongoing works, such as dredging, required to maintain adequate keel clearance, and the effects of disturbing sediment in the Tamar River. Measures to avoid, manage and mitigate impacts must be described.

#### 7.9.9 Resource extraction

Demonstrate that the project is consistent with the objectives and requirements of the *Environmental Management and Pollution Control Act 1994* and with the principles and suggested measures of the *Quarry Code of Practice 1999* published by the Department of Primary Industries, Water and Environment.

#### 7.9.10 Light emissions

- (1) Details of the light emissions from off-site infrastructure, including the woodchip mill facilities proposed port facilities and marine vessels, and its potential to cause nuisance.
- (2) Describe the potential for light emissions from off-site infrastructure to affect fauna, particularly nocturnal fauna, and migratory birds.
- (3) Measures to avoid, manage and mitigate light emissions must be described.

#### 7.9.11 Visual impacts

The visual impact assessment is to take account of the appearance of any off-site infrastructure from significant vantage points including major roads, roads with tourism significance, residential areas, the Tamar River, places on the Register of the National Estate and tourist attractions, and how this might impact on the visual amenity of the area. In addition, the visual impact assessment is to take account of the colour of effluent discharged at the marine outfall. Measures to avoid, manage and mitigate potential visual impacts are to be identified. The assessment is to describe clearly the methodology, assumptions and terminology used.

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**7.10 Construction phase**

7.10.1 General

This section should identify the potential environmental and health impacts likely to occur during the construction phase of the project (including on and off-site facilities and infrastructure) and measures to avoid, manage and mitigate any possible adverse impacts.

The following issues must be addressed.

7.10.2 Noise emissions and ground vibration

- (1) Major sources of noise and ground vibration arising from construction activities on site must be identified.
- (2) Any increases in ambient noise levels at residences or other noise sensitive areas during the construction phase must be predicted. Both day-time and night-time situations must be identified and considered, together with the nature of the noise and its potential to cause nuisance (tonal components, impulsive or intermittent noise etc.) and its auditory and non-auditory impacts on health.
- (3) Measures to avoid, manage and mitigate noise and ground vibration must be described.

7.10.3 Dust

- (1) Evaluate the potential for dust nuisance and health effects.
- (2) If necessary, outline measures to avoid, manage and mitigate dust emissions across the boundary of land owned or controlled by the proponent.

7.10.4 Traffic – road and rail

- (1) Identify the State and local routes to be used by construction traffic, and the likely volume and nature of traffic and timing of traffic flows (cross-reference 'Project Description').
- (2) Evaluate the potential for impacts due to construction traffic, including noise and public health, safety and congestion, and the effect on road pavements, including culverts and bridges, in light of the above.
- (3) Describe measures to avoid, manage and mitigate these impacts to acceptable levels.

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7.10.5 Stormwater control

- (1) Describe measures to avoid, manage and mitigate stormwater runoff and limit sediment and other pollutant loads in runoff, (including collection of first flush and treatment with measures such as sedimentation pits, gross pollution traps, grass swales, rock filters, and, or, biofilters) entering water courses and the marine environment, both during the construction and operational phases of the plant and associated elements including pipelines, culverts, roads and bridges. It should be demonstrated that best practice environmental management measures for the control of erosion and stormwater runoff will be used to ensure water quality objectives are achieved.
- (2) Identify discharge point for stormwater and likely residual impacts.

7.10.6 Disposal of excavated fill

- (1) Identify and quantify any materials, including any contaminated material, excavated during construction which will not be able to be used on site.
- (2) Identify means of maximising use of excavation material on site and minimising off site disposal.
- (3) Identify likely disposal sites and identify the transport requirements to ensure waste disposal, including any contaminated material.

7.10.7 Public health and safety

- (1) Identify any potential hazards to public health and safety during the construction phase not identified previously.
- (2) Describe safety management systems to be used during construction.

7.10.8 Potential impacts on the biophysical environment

- (1) Identify potential impacts on biodiversity and conservation values. Discussion of impacts should include site clearing works and disturbance, movement of heavy equipment, noise, and recreation by the construction workforce. Issues that must be addressed include:
  - Effects on flora and fauna, with particular reference to threatened species, communities and habitats, including those listed under the Tasmanian *Threatened Species Protection Act 1995*.
  - Effects on listed threatened species and communities under the relevant Schedules of the EPBC Act, including the Spotted-tailed Quoll (*Dasyurus maculatus maculatus*), Eastern Barred Bandicoot (*Perameles*

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*gunnii gunnii*), Tailed Spider-Orchid (*Caladenia caudata*), the Tasmanian subspecies of Wedge-tailed Eagle (*Aquila audax fleayi*), Swift Parrot (*Lathamus discolor*), South Esk Heath (*Epacris exserta*), Shiny Grass Tree (*Xanthorrhoea bracteata*), Tasmanian Giant Freshwater Lobster (*Astacopsis gouldi*), Australian Grayling (*Prototroctes maraena*) and Green and Gold Frog (*Litoria raniformis*).

Note: Reference to particular listed species does not exclude additional species. Any listed species that may be impacted by the proposal must be considered.

- Effects on listed migratory species under the EPBC Act.
- Effects on identified areas or habitats of conservation significance, including designated conservation areas, areas relating to the requirements of international treaties or significant wetlands.
- Effects on sites of geoconservation significance or natural processes (such as fluvial or coastal features), including sites of geoconservation significance listed on the Tasmanian Geoconservation Database.
- Effects on existing formal and informal reserves which may be affected by the project.
- The potential for migration and/or introduction of pests, weeds and plant and animal diseases, particularly *Phytophthora cinnamomi*, as a result of the project.
- Rehabilitation of disturbed areas following the completion of construction activities, including the use of endemic plant species where appropriate.
- Reference should be made to potential effects of vehicle movements on wildlife as a result of the project, and to proposed mitigation measures for any wildlife priority areas.

(2) Measures to avoid, manage and mitigate impacts must be described.

7.10.9 Marine environment

- (1) Evaluate potential impacts on EPBC Act listed threatened marine species and listed migratory marine species found in the area, as well as the marine environment as a whole.
- (2) Evaluate potential impacts on marine habitats and marine biota defined to include 'fish' (as defined by *Living Marine Resources Management Act 1995*), marine mammals and seabirds.

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- (3) Identify measures to avoid, manage and mitigate potential impacts.
- (4) Identify any potential hazards to the marine environment from construction activities and management measures proposed. This should be made in the context of the Tasmanian Marine Oil Pollution Contingency Plan.

**7.10.10 Dredging**

- (1) Evaluate the potential for sediment disturbance, sediment plumes and any other environmental impact in the Tamar River arising as a consequence of dredging.
- (2) Describe measures to avoid, manage and mitigate these impacts to acceptable levels.

**7.10.11 Potential heritage impacts**

- (1) Identify the following:
  - Any places listed on the National Heritage List and values under the EPBC Act.
  - Any places listed on the Register of the National Estate and values.
  - Any places listed on the Tasmanian Heritage Register (maintained by the Tasmanian Heritage Council), including consideration of cultural landscapes.
  - Any places on the Tasmanian Historic Places Inventory (maintained by the Heritage Tasmania).
  - Any places on the Tasmanian Aboriginal Site Index (maintained by the Aboriginal Heritage Office), including consideration of cultural landscapes.
  - Local government planning scheme heritage schedules.
  - Any other places of heritage significance.
- (2) Any cultural Aboriginal heritage surveys must, as a minimum, comply with the requirements of the *Aboriginal Heritage Survey and Recording Tasmania Draft Consultancy Brief* and the *Guidance for the Production of Aboriginal Survey Reports* prepared by the Aboriginal Heritage Office. Any approvals required under the *Aboriginal Relics Act 1975* or the *Historic Cultural Heritage Act 1995* should be identified.

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- (3) Consultation with the Tasmanian Aboriginal Land and Sea Council, the Office of Aboriginal Affairs, the Aboriginal Heritage Office, as well as with Aboriginal communities, should occur prior to any survey of potential sites to establish regulatory requirements for heritage values, places and landscapes.
- (4) The requirements of the Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* should also be considered where there is a threat of injury or desecration to an area which is significant as part of Aboriginal tradition, and potential impacts identified, assessed and managed in consultation with the traditional owners, Native Title claimants and any other indigenous people with rights and interests in the area.

**7.10.12 Light emissions**

- (1) Light emissions must be estimated for the construction phase, and its potential to cause nuisance.
- (2) Measures to avoid, manage and mitigate light emissions must be described.

**7.11 Environmental management**

This section must provide an outline of a comprehensive Environmental Management System (EMS) which should be prepared (following project approvals) for the entire process of construction and operation of the pulp mill, including the construction and operation of off-site infrastructure.

The EMS must conform to an internationally recognised standard specification for environmental management systems (such as ISO 14001). It must provide the direction and framework for all environmental management initiatives for the pulp mill project, to ensure that all necessary environmental conditions are adequately addressed throughout its life cycle. As such, the EMS should have the following elements:

- adoption and implementation of an Environmental Management Policy;
- a systematic review of the environmental aspects of the business;
- a systemised Environment Management Program, arising from environmental reviews;
- identification of key personnel who manage, perform, and verify work affecting the environment;

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- procedures to record all legislation, regulations and other policy requirements pertaining to the environmental effects of the proponent's pulp mill business activities;
- procedures for examining, assessing and recording the environmental effects of the proponent's pulp mill business activities;
- the adoption of environmental performance measures, objectives and targets, and a process for monitoring and reporting environmental performance against these indicators;
- the drafting of an Environmental Management Manual and Environmental Procedures, which will be updated and augmented, as required;
- assignment of environmental responsibilities and accountabilities to managers and officers to ensure that environmental control, verification, measurement and testing are adequately coordinated and effectively performed;
- a system of records established and maintained in order to demonstrate compliance with the requirements of the EMS, and the extent to which environmental objectives and targets have been met;
- a program for regular environmental auditing;
- a process for audit and review of the EMS so as to ensure continuing suitability and effectiveness; and
- an ongoing formal interaction process with relevant authorities and the public.

## 7.12 Commissioning phase

### 7.12.1 General

The Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania* recognises that special arrangements may need to apply during the period of commissioning of new equipment prior to start-up of the mill, and that emission limits may be exceeded during this period.

This section should outline the likely duration of the commissioning period, identify potential impacts particular to the commissioning phase. Details of any measures to avoid and, or, mitigate any possible adverse effects, should be described.

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Note: All relevant documents, including operator logs, to be provided to the regulatory authority in the event of more than one odour emission per week during the commissioning period.

### 7.13 Greenhouse gas production and ozone depletion

#### 7.13.1 General

- (1) This section should discuss the net impact that the development of the pulp mill project may have on greenhouse gas production and ozone depletion.
- (2) Describe the measures to avoid, manage or mitigate the impacts highlighted in (1) above.

#### 7.13.2 National greenhouse strategy

Describe the extent that the project complies with the National Greenhouse Strategy.

7.13.3 Any feasible alternative ways of providing energy for the project, transport of materials to and from the mill, or otherwise implementing the project in order to reduce overall greenhouse gas emissions. Any such options identified must be evaluated in the context of the net effect of the project on the enhanced greenhouse effect, and the reasons for not adopting these options justified.

7.13.4 Calculate the total annual greenhouse gas emissions estimated to arise from the operation of the mill and transport of raw materials and product:

- in terms of carbon dioxide mass equivalents; and
- reference should be made to the *Australian Methodology for the Estimation of Greenhouse Gas Emissions and Sinks* workbooks, produced by the National Greenhouse Gas Inventory Committee and available from the Australian Greenhouse Office.

#### 7.13.5 Ozone depletion

Any use of ozone depleting substances as part of the project in mill (e.g. in refrigeration or for fire-fighting) should be identified and justified. Compliance with the relevant provisions of the *Environmental Management and Pollution Control Act 1994* should be demonstrated.

### 7.14 Decommissioning

A notional decommissioning plan should be outlined. This should include any possible restrictions on use and development of the site including disposal sites,



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infrastructure associated with the delivery of water, and disposal of effluent following de-commissioning.

## **8. Potential economic impacts and their management**

### **8.1 General**

The purpose of this chapter is to examine the economic significance of the pulp mill project and the economic impacts, on a local, regional, State and national level, of the project either proceeding or not proceeding on a best and worst case scenario. Provide in tabular format the parameters, variables, judgments and assumptions for each economic modelling scenario.

### **8.2 Existing economic profile**

This section should provide a summary of the existing economic profile of the State and regions directly affected by the proposed pulp mill development. Source documents must be referenced for the summary of the existing economic profile.

### **8.3 Broad economic impacts**

Critically analyse, quantify and assess the broad economic impacts on the Commonwealth and Tasmania of the project, distinguishing between the initial construction phase and subsequent operational phases, inclusive of where the capital expenditure will primarily be invested (local, State, regional levels) both direct and indirect, including the following:

- impact on Gross National Product, in total and by industry sectors;
- impact on Gross State Product, in total, by industry sectors, and by region;
- impact on consumption and investment expenditure in Tasmania;
- impact on employment in Tasmania; and
- impact on business, investor and consumer confidence.

### **8.4 Impacts on public revenue and expenditure**

Critically analyse, quantify and assess both direct and indirect impacts of the project on public revenues and expenditure at Local, State, and Australian Government levels, including any businesses owned by local, Tasmanian and Australian governments, for the life of the project. Examination of any government supplied benefits that have or will be supplied to the proponent to make the project viable or reduce its risk exposure (including direct government financial or infrastructure contributions, or tax concessions). The proponent should take account of the timing of payments and costs, including the costs of additional monitoring to all levels of government over the life of the project and

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anticipated contributions. Any anticipated forms of public subsidy, both direct and indirect, shall be identified and described. Any costs to be borne by public expenditure for the management of social, environmental and economic impacts of the pulp mill project should be individually detailed.

The section should distinguish in these matters between the initial construction phase and subsequent operational phases. It must highlight any major differences in the impacts of alternative development options and development sites.

Such an analysis should include, amongst other things, consideration of the following:

- 8.4.1 Provision, maintenance and commercial arrangements with relevant infrastructure suppliers for the provision of supporting infrastructure to specified standards that will serve the project site, including:
- transport including short term and long term costs;
  - power;
  - water supply;
  - dredging and other port associated works;
  - sewage and liquid waste disposal; and
  - solid waste disposal.
- 8.4.2 Requirements for additional government expenditure or enhanced community services and facilities and any impacts on current levels of government health, education and housing expenditure.
- 8.4.3 Payments to governments, including:
- taxes and charges;
  - rates;
  - tariffs;
  - royalties, including stumpage or residual;
  - stamp duties;
  - leases;
  - access to Crown land and mineral leases; and

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- water costs.

### 8.5 Employment impacts

Critically analyse, quantify and assess the employment impacts which will arise as a result of the project both during the construction and operation phases. Both direct and indirect predicted impacts should be assessed and are expected to include the following:

- 8.5.1 The types of job classified (where possible) in accordance with the major and minor ASCO job classifications as used by the Australian Bureau of Statistics (Catalogue no. 1222.0) that will be generated and the number of jobs of each type.
- 8.5.2 The regional distribution of the employment impact, both in the construction and operational phases of the project.
- 8.5.3 Impact on employment in industry sectors.
- 8.5.4 The capacity of the Tasmanian workforce to meet the employment needs of the project and jobs created in other sectors as a result of the project.
- 8.5.5 Special attention should be paid to training and education and the impact on job opportunities arising from the project, both in its construction and operation.
- 8.5.6 Job categories which cannot or will not be filled by Tasmanians should be specifically identified to the extent possible.

### 8.6 Impacts on other industries

Critically analyse, quantify and assess the likely economic impacts of the project on other industries. Positive and negative impacts are possible and particular attention should be paid to assessing proposed means by which any potential negative effects may be avoided, remedied or mitigated. Particular consideration must be given to the following:

- 8.6.1 The impact on the Tasmanian construction industry, and the capacity of the present industry, at both a regional, State and national level, to meet the needs of the project.

This analysis should include the construction (on-site or off-site) and supply components of the construction industry; the impact on the professional services required for the project and the effects on the maintenance sector of the industry.

- 8.6.2 The opportunities the development may offer for the establishment of new industries or expansion of existing industries in Tasmania, i.e. synergistic or spin-off effects which may become possible due to the size and nature of the project.

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- 8.6.3 The extent to which raw, manufactured and processed materials and related services are expected to be sourced locally.
- 8.6.4 The likely effect on the existing and emerging forest products processing industries at both local and State levels.
- 8.6.5 The likely effect on native forest management and plantation development industries at both regional and State level.
- 8.6.6 The effects on pulpwood suppliers, including private industrial and non-industrial forest owners and sawmillers in regard to logging and sawmill residues.
- 8.6.7 The likely effect of the demand for pulpwood on existing softwood processors, including the supply of softwood on a sustainable basis.
- 8.6.8 The likely effects on rural land holders and primary industry in the vicinity of the development and offsite infrastructure. Possible changes in the pattern of land and water use, and consequent changes in property values, land productivity and the viability of rural operations should be explored.
- 8.6.9 Impact on transport, tourism, marine and freshwater fisheries (commercial and recreational), marine farming; environmental management and related industries.
- 8.7 Impact of project not proceeding**

Critically analyse any economic impacts not evident from the above analysis of the project not proceeding.

## **9. Social and community impacts**

### **9.1 Social and community effects and issues**

Critically analyse, quantify and assess the social and community effects and issues for both the initial construction phase and the operational phase which are relevant to the evaluation of the project. These should include:

9.1.1 A summary of the social/demographic characteristics of the population living in the vicinity of the pulp mill site within the local airshed (as defined in section 6.1) during both the construction and operation phases.

9.1.2 The likely impact on communities in the vicinity of the development site(s) within the local airshed (as defined in section 6.1) and major regional centres should be examined.

Separate consideration should be given to the initial construction phase and the operational phase over the staged development of the project. The effects considered should include:

- population and social structure;
- demand for land and housing;
- property values;
- town planning issues;
- transport and transportation infrastructure;
- sensitive facilities such as schools, hospitals and nursing homes;
- general practitioner and occupational health medical and nursing services;
- tourism, recreational and social amenities;
- emergency services;
- policing requirements.

9.1.3 The evaluation of the region's capacity to service the requirement for housing and maintain local support services shall include reference to the proponent's intention to contribute to or participate in a range of housing options for company employees in both the construction and operational phases of the project. The evaluation should address the impact on the private rental market, in particular, its capacity and any flow on effects of inflated rents from increased demand.

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- 9.1.4 The way of life of the present residents of the region (defined in section 6.1 as the regional airshed) and the overall effect on their lifestyle.
- 9.1.5 The potential effects on existing social structures and community groups in the region.
- 9.1.6 The need for ongoing consultation with the community on matters such as plant performance, emergency planning and safety measures, should be addressed. A plan for community consultation and engagement should be prepared which addresses the social impacts identified in 9.1.2.
- 9.1.7 Any other issues of a social, environmental, economic or community nature which become evident as matters of public concern as a result of public consultation programs, and not dealt with elsewhere, should be analysed and assessed.
- 9.1.8 Any informal communication mechanisms for the community as a whole to ensure there is a broad understanding of the mill operations and environmental performance.
- 9.1.9 Detail a public complaint response protocol that provides a means for public complaints to be received by the proponent during the construction and operational phases, and a procedure for responding to any complaints received (including investigation, mitigation (if necessary), feedback and documentation steps).

**9.2 Consistency with State and Australian government industry policies**

Critically analyse, quantify and assess in terms of social and community impacts, how this project is consistent with relevant State and Australian government industry policies.

**9.3 Impact of project not proceeding**

Critically analyse, quantify, and assess any social, economic or community impacts of the project not proceeding which are not already evident from the above analysis.

## 10. Monitoring

### 10.1 Environmental effects

Monitoring programs to ascertain compliance with performance standards, quality assurance and project objectives should be described, including habitat mapping and biological studies (i.e. baseline studies) and pre-operational studies required under the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*. A draft monitoring plan for the operational phase should be prepared and attached as an appendix to the IIS.

### 10.2 Monitoring objectives

The studies/monitoring programs should be designed to meet the following objectives:

- Monitoring compliance with emission standards and other performance requirements;
- Assessing the effectiveness of the performance requirements and emission limits and environmental safeguards in achieving environmental quality objectives;
- Assessing the extent to which the predictions described in the IIS have eventuated;
- Fulfilling the requirements of the conditions of approval for the project including, as a minimum, the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*.
- Assessing progress to the meeting of commitments as outlined in chapter 12 and specifying procedures for ensuring unmet commitments are achieved.

### 10.3 Implementation, quality assurance and review

10.3.1 The IIS should outline an appropriate procedure for the periodic review/auditing of the environmental management of the mill and the outputs from the monitoring program. As a minimum, this must comply with the requirements of the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*.

10.3.2 Indication should be given of any provision made in project planning for the tightening of initial environmental standards and further remedial action should

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monitoring indicate that the project is causing unexpected environmental degradation. A process should be outlined for continuously improving operational performance (cross-reference to section 7.10 'Environmental Management').

10.3.3 Any plans to achieve ISO 14000 certification should be outlined.

**10.4 Social, economic and community effects**

Programs (in addition to, or in substitution of those required to be defined and developed by the project proponent) required for monitoring and, if necessary, remediation or mitigation of any negative social, economic and community impacts discovered, should be described. The monitoring programs should be designed to meet the following objectives:

- monitoring of commitments listed in chapter 12 of the IIS ;
- monitoring compliance of conditions of approval related to social, economic and community issues;
- assessing the effectiveness of measures implemented to meet social, economic and community objectives of the project;
- assessing the extent to which the predictions of the IIS have eventuated.

## 11. Conclusion

This chapter should:

- (1) Summarise the critical environmental, social, economic and community impacts, both positive and negative, of the project;
- (2) Summarise the extent to which the project furthers the objectives of Tasmania's Resource Management Planning System including sustainable development; and
- (3) Present a balanced overview of the net environmental, social, economic and community impact of the project and the extent to which any adverse effects can be adequately avoided, managed or mitigated.

The conclusion should also describe how the project meets the Tasmanian Government 2004, *Environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*. A conclusion on the ability of the project to further the objectives of sustainable development must be provided. (Appendix A).

## 12. Commitments

A consolidated list of all major commitments should be provided with cross-references to the relevant section of the IIS where the commitment is detailed. This should include accepted performance specifications made in the IIS for the protection of the environment including the objectives of Tasmania's Resource Management and Planning System and means of ensuring compliance with standards set. It should include:

- specific commitments required to achieve ecologically sustainable development;
- specific commitments required to avoid, remedy or mitigate undesirable environmental, social, economic or community impacts; and
- specific commitments to enhance the benefits which could flow from the project to Tasmania.

These commitments should be worded as follows:

- who is responsible (eg the proponent);
- will do what (eg prepare a plan, take action);
- why (to meet an environmental objective);
- where/how (detail the action plan and where it applies);
- when (in which phase of the project);
- to what standard (recognised standard or agency to be satisfied); and
- on advice from (agency to be consulted).

## **13. References**

Details of authorities consulted, reference documents etc., should be listed. For information given in the IIS, the draft must state:

- (a) the source of the information; and
- (b) how recent the information is; and
- (c) how the reliability of the information was tested; and
- (d) what uncertainties (if any) are in the information.

## **14. Appendices**

As a means of improving readability, all detailed technical information which provides the basis of the IIS should be included in appendices. The salient features of the appendices should be included in the main part of the text.

## Abbreviations and acronyms

### Abbreviations

AMT	Accepted Modern Technologies
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agricultural and Resource Management Council of Australia and New Zealand
BAT	Best Available Techniques
BPEM	Best Practice Environmental Management
CAMBA and JAMBA	Migratory Birds Agreements with China and Japan Commission
ECF	Elemental Chlorine Free
EE	Environmental Emission
EMS	Environmental Management System
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)</i>
HAZAN	Hazard Analysis
HAZOP	Hazard and Operability Study
IIS	Integrated Impact Statement
MARPOL	Convention for the Prevention of Pollution from Ships (MARPOL)
MWWB	Millwide Water Balances
NIMPCG	National Introduced Marine Pest Coordination Group
OMB	Overall Material Balances
SPB	Steam and Power Balance
TCF	Totally Chlorine Free
UNCLOS	United Nations Convention on the Law of the Sea

## APPENDIX A

### *STATE POLICIES AND PROJECTS ACT 1993 (TAS)*

#### **Schedule 1, OBJECTIVES OF THE RESOURCE MANAGEMENT AND PLANNING**

##### **SYSTEM OF TASMANIA**

- 1 The objectives of the resource management and planning system of Tasmania are -
  - (a) to promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity; and
  - (b) to provide for the fair, orderly and sustainable use and development of air, land and water; and
  - (c) to encourage public involvement in resource management and planning; and
  - (d) to facilitate economic development in accordance with the objectives set out in paragraphs (a), (b) and (c); and
  - (e) to promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in the State.
  
- 2 In clause 1(a), "sustainable development" means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while -
  - (a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and
  - (b) safeguarding the life-supporting capacity of air, water, soil and ecosystems; and
  - (c) avoiding, remedying or mitigating any adverse effects of activities on the environment

## APPENDIX B

### *ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION REGULATIONS 2000 (Cwlth)*

#### **REGULATION 5.04, SCHEDULE 4**

#### **MATTERS TO BE ADDRESSED BY DRAFT PUBLIC ENVIRONMENT REPORT AND ENVIRONMENTAL IMPACT STATEMENT**

##### 1 General Information

###### 1.01 The background of the action including:

- (a) the title of the action;
- (b) the full name and postal address of the designated proponent;
- (c) a clear outline of the objective of the action;
- (d) the location of the action;
- (e) the background to the development of the action;
- (f) how the action relates to any other actions (of which the proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action;
- (g) the current status of the action;
- (h) the consequences of not proceeding with the action.

##### 2 Description

###### 2.01 A description of the action, including:

- (a) all the components of the action;
- (b) the precise location of any works to be undertaken, structures to be built or elements of the action that may have relevant impacts;
- (c) how the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts;
- (d) relevant impacts of the action;

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- (e) proposed safeguards and mitigation measures to deal with relevant impacts of the action;
- (f) any other requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action;
- (g) to the extent reasonably practicable, any feasible alternatives to the action, including:
  - (i) if relevant, the alternative of taking no action;
  - (ii) a comparative description of the impacts of each alternative on the matters protected by the controlling provisions for the action;
  - (iii) sufficient detail to make clear why any alternative is preferred to another;
- (h) any consultation about the action, including:
  - (i) any consultation that has already taken place;
  - (ii) proposed consultation about relevant impacts of the action;
  - (iii) if there has been consultation about the proposed action — any documented response to, or result of, the consultation;
- (i) identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.

### 3 Relevant Impacts

#### 3.01 Information given under paragraph 2.01 (d) must include:

- (a) a description of the relevant impacts of the action;
- (b) a detailed assessment of the nature and extent of the likely short term and long term relevant impacts;
- (c) a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible;
- (d) analysis of the significance of the relevant impacts;
- (e) any technical data and other information used or needed to make a detailed assessment of the relevant impacts.

### 4 Proposed Safeguards and Mitigation Measures

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4.01 Information given under paragraph 2.01 (e) must include:

- (a) a description, and an assessment of the expected or predicted effectiveness of, the mitigation measures;
- (b) any statutory or policy basis for the mitigation measures;
- (c) the cost of the mitigation measures;
- (d) an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing;
- (e) the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program;
- (f) a consolidated list of mitigation measures proposed to be undertaken to prevent, minimise or compensate for the relevant impacts of the action, including mitigation measures proposed to be taken by State governments, local governments or the proponent.

5 Other Approvals and Conditions

5.01 Information given under paragraph 2.01 (f) must include:

- (a) details of any local or State government planning scheme, or plan or policy under any local or State government planning system that deals with the proposed action, including:
  - (i) what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy;
  - (ii) how the scheme provides for the prevention, minimisation and management of any relevant impacts;
- (b) a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action;
- (c) a statement identifying any additional approval that is required;
- (d) a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.

6 Environmental Record of Person Proposing to Take the Action

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- 6.01 Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:
- (a) the person proposing to take the action; and
  - (b) for an action for which a person has applied for a permit, the person making the application.
- 6.02 If the person proposing to take the action is a corporation — details of the corporation's environmental policy and planning framework.

**7 Information Sources**

- 7.01 For information given in a draft public environment report or environmental impact statement, the draft must state:
- (a) the source of the information; and
  - (b) how recent the information is; and
  - (c) how the reliability of the information was tested; and
  - (d) what uncertainties (if any) are in the information.

## APPENDIX C

### ***THE LAND USE PLANNING AND APPROVALS ACT 1993 — PART 2, SCHEDULE 1 —***

#### **OBJECTIVES OF THE PLANNING PROCESS ESTABLISHED BY THIS ACT**

The objectives of the planning process established by this Act are, in support of the objectives set out in Part 1 of this Schedule—

- (a) to require sound strategic planning and co-ordinated action by State and local government; and
- (b) to establish a system of planning instruments to be the principal way of setting objectives, policies and controls for the use, development and protection of land; and
- (c) to ensure that the effects on the environment are considered and provide for explicit consideration of social and economic effects when decisions are made about the use and development of land; and
- (d) to require land use and development planning and policy to be easily integrated with environmental, social, economic, conservation and resource management policies at State, regional and municipal levels; and
- (e) to provide for the consolidation of approvals for land use or development and related matters, and to co-ordinate planning approvals with related approvals; and
- (f) to secure a pleasant, efficient and safe working, living and recreational environment for all Tasmanians and visitors to Tasmania; and
- (g) to conserve those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value; and
- (h) to protect public infrastructure and other assets and enable the orderly provision and co-ordination of public utilities and other facilities for the benefit of the community; and
- (i) to provide a planning framework which fully considers land capability.



## **APPENDIX D**

**Map of the area defined as the 'local airshed' of the proposed bleached kraft pulp mill.**



## **APPENDIX E**

**Map of the area defined as the ‘regional airshed’ of the proposed bleached kraft pulp mill.**

## **APPENDIX F**

### **Characterisation of levels of potential kraft pulp mill emissions in food samples**

In terms of methodology it is suggested that on at least four occasions spaced a minimum of 1 month apart during the 12 month period during which air monitoring is conducted, the levels of dioxins (including all PCDD and PCDF congeners that are required for the calculation of TEQ) must be measured in pasteurised milk collected from cows grazing on pasture in the area within the regional airshed. The method for collection and testing to be determined and approved in consultation with the Commission and the regulatory authority. These milk samples should be collected in sufficient quantity to enable each chemical analysis to be conducted and the results tabulated in section 6.2 (23) of the IIS.

## **APPENDIX G**

### **Characterisation of levels of potential kraft pulp mill emissions in sediments and other marine plants and animals in Bass Strait**

It is suggested that on at least four occasions spaced a minimum of 1 month apart during the 12 month period during which air monitoring is conducted, samples of surface sediments from the sea floor, marine plants and animal species (selection of species to be agreed by the Commission in conjunction with the regulatory authority) must be collected in Bass Strait in a zone within the periphery of the mixing zone of the proposed mill liquid effluent diffuser and within the zone of influence. These samples must be subjected to quantitative analysis for sterols, softwood-related resin acids, monoterpenes and diterpenes, dioxins (including all PCDD and PCDF congeners that are required for the calculation of TEQ) and AOX and the results tabulated in section 6.2 (25) of the IIS.