

5. Conclusion

The Bell Bay pulp mill is the largest single development project in Tasmania's history, and a major project at a national level. The project has raised high levels of community interest and the Draft IIS has addressed the most comprehensive terms of reference ever developed for an impact study in the state.

The project is consistent with the planning objectives of the George Town and West Tamar Planning Schemes.

The project brings with it environmental, social and economic costs and benefits. These effects have been considered in this Draft IIS and are summarised below. Management measures and commitments made by Gunns to off-set some of these effects are also identified.

5.1 Project Impact Summary

Construction and operation of a project of this scale will result in environmental, social and economic benefits and costs. The key benefits and costs are summarised below.

Economic

The pulp mill would yield substantial positive benefits to Tasmania and Australia in the form of greater economic activity and employment. Key economic benefits include:

- ▶ Tasmania's gross State product (GSP, or the State equivalent of GDP) would be \$6.7 billion higher than otherwise in net present value (NPV5%) terms from 2007 to 2030.
- ▶ An additional 3,400 jobs in Tasmania during the construction phase;
- ▶ On average, an additional 1,617 jobs during operation to a peak of about 2,000 jobs by 2030;
- ▶ Development of training courses with TAFE and other institutes for accelerated training programs to address skills shortages. Of the estimated 292 operational jobs, 60% will require additional training;
- ▶ A redistribution of an additional \$424m in GST revenue to Tasmania from 2008 to 2030. For all Australian Governments (state and national) nearly \$1b in increased tax revenue will be generated between 2008 and 2030;
- ▶ An increase in road transport freight output of \$14m in 2008. Operation road freight output will grow to \$15m by 2030;
- ▶ Tasmanian basic chemical industries will grow by \$8m by 2030;
- ▶ Additional expenditure on the local economy of \$39m by the construction workforce; and
- ▶ Increased impacts to trade and accommodation sectors of \$98m in 2008 and growing to \$58m during operation.

Environment

As a result of the project, there will be some negative environmental impacts. Key environmental impacts include:

- ▶ Loss of vegetation communities and listed species within the Bell Bay site and along the pipeline corridors;
- ▶ Loss of fauna habitat at the pulp mill site;
- ▶ Disturbance to the marine environment from construction of the ocean outfall;
- ▶ Changes to a small area of the marine environment at the ocean outfall mixing zone; and
- ▶ Noise during construction of the pulp mill, particularly early earthworks.

Gunns recognises the importance of mitigating these environmental impacts to the extent reasonably practicable. The proposed mitigation strategies are described below.

Social

Social benefits and costs will result from both the construction and operation of the project. These include:

- ▶ Increased job opportunities for the local community, both direct or indirect;
- ▶ Indirect benefits from increased job opportunities during construction and operation. Higher income levels will result in improved health and education within the local community.
- ▶ Improved or expanded services for the local community;
- ▶ Negative impacts associated with the influx of a large construction workforce into the small communities of George Town and surrounds;
- ▶ Some residents at Rowella will be affected by noise, particularly during construction of the pulp mill; and
- ▶ The usual amenity experienced by some residents at Rowella will be reduced by the construction and operation of the pulp mill.

Gunns recognises the importance of mitigating these social impacts to the extent reasonably practicable. The proposed mitigation strategies are described below.

5.2 Management Strategies to Mitigate Impacts

In developing the Bell Bay pulp mill project, the selection of process and design elements included environmental and social considerations. Management strategies were also considered to further reduce potential impacts from the project. Most impacts will be successfully mitigated or offset, though this does not mean that all of the impacts will be entirely eliminated or offset. In some instances, the impacts can only be mitigated or offset in part. Other impacts cannot be mitigated or offset at all. As a result, an informed value-judgement on the merits of the project and the appropriateness of the mitigation strategies must be based on an assessment of the overall costs and benefits of the project.

Key management and mitigation strategies include:

- ▶ The pulp mill will be designed to comply with the AMT recommended in the Emission Guidelines, subject to clarifying the status of the integrated chlorine dioxide plant (which is one of the options being considered by Gunns). The pulp mill design is also consistent with the BAT recommended in the draft UNEP Guidelines prepared under the Stockholm Convention;

- ▶ Air and water emissions from the pulp mill will be continuously monitored to ensure they comply with the levels recommended in the Emission Guidelines, subject to clarifying the emissions levels for NO₂, SO₂ and other consent requirements;
- ▶ Collection and incineration of concentrated and diluted malodorous gases and control of the resulting SO₂ emissions;
- ▶ Direct drilling of the coastal crossing pipeline under nationally listed flora;
- ▶ Offshore trench excavation to be undertaken by barge-mounted excavator to minimise disturbance to the marine environment;
- ▶ Construction of the Lake Trevallyn pump station during routine maintenance of the dam so as to minimise interruption to Hydro Tasmania operations;
- ▶ Wharf facility will be on trestles to minimise disturbance to water flows in the Tamar River;
- ▶ Elevated stack height to maximise dispersion of emissions;
- ▶ Construction of a dedicated landfill to minimise pressure on regional waste facilities;
- ▶ Redesign of precast fabrication area to minimise impacts on local waterways;
- ▶ Location of wharf facility and warehouse to avoid historic heritage sites;
- ▶ First flush and contaminated stormwater will be treated in the effluent treatment plant;
- ▶ Environmental flows into Cataract Gorge will not be reduced;
- ▶ A management plan for limiting the impact of the influx of persons into the George Town precinct;
- ▶ Construction of accommodation facilities to house up to 800 workers if required to ameliorate potential effects associated with an influx of people into George Town;
- ▶ A collaboration between Gunns and TAFE Tasmania;
- ▶ Establish a community liaison group with local community and stakeholders;
- ▶ Gunns preferred operation of the pulp mill proposes to utilise the rail transport network as a method of freighting additional resources from outside the north east region to the pulp mill;
- ▶ Noise attenuation of existing and new chippers to meet project noise objectives;
- ▶ A Construction Environmental Management Plan will be developed in conjunction with DPIW and DTAE to mitigate impacts during construction. Subsidiary plans will include:
 - Sediment and Erosion Control Plan
 - Rehabilitation Plan
 - Fire Management Strategy
 - Fauna Management Plan
 - Vegetation Management Plan
 - Traffic Management Plan
 - Waste Management Plan
 - Noise Management Strategy
 - Landscaping Management Plan
 - Cultural Heritage Management Plan

- Construction Traffic Management Plan
- Remediation and Revegetation Plan for coast crossing for ocean outfall
- ▶ Establish a compensatory offset for listed vegetation communities by reserve and covenant (on title) from within the Gunns estate in the north-east region of Tasmania, as close as practical to the pulp mill site; and
- ▶ Establish a network of reserves at the pulp mill site and adjoining areas, which will incorporate approximately 150 ha of native vegetation.

5.3 Tasmania's Resource Management and Planning System

The Tasmanian Resource Management and Planning System focuses on the sustainable development of natural and physical resources.

In considering any assessment of sustainability, it must be recognised that it is not possible for any project to have a zero net use of resources. Indeed, the notion of sustainability is understood as meaning the use of resources in a way that sustains and supports environmental values while achieving economic and social benefits. For any project, the realistically achievable objective is to minimise the utilisation of resources when considering technologies, processes, design, construction and operation and maximising the economic and social benefits of the project.

As detailed in the SPP Act and Scope Guidelines, the following relates to the objectives of the Tasmanian Resource Management and Planning System:

- 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*

The extent to which the project furthers these objectives is discussed below.

To promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity

The Bell Bay pulp mill project meets the above sustainable development objectives by utilising a sustainable forestry resource sourced from plantation and RFA-managed forests as the main input to the production of pulp. By maximising the use of plantation wood to the pulp mill, the project will utilise a resource at a rate which can be sustained for the life of the project and beyond. The pulp mill will not result in any changes to forest access or intensification of forestry operations as it simply processes woodchips otherwise destined for export.

The other key resource utilised by the mill is water. Water will be accessed from Lake Trevallyn from an existing allocation utilised by Hydro Tasmania. Changes to the flow of the Tamar River will be less than 1%. The treated effluent will be discharged to Bass Strait.

Best available technology (BAT) and accepted modern technology (AMT) will be utilised in emission controls and water treatment to safeguard air and water environment. Emissions to air will have a minimal contribution to the local airshed. Discharges to the marine environment will not result in environmental impact outside the defined mixing zone. Minimal impacts to the marine environment are expected within the zone.

Mitigation strategies have been developed to address those areas for which achievable benefits can be realised. Gunns has committed to a range of strategies designed to result in a positive net environmental, economic and social outcome from the project.

To provide for the fair, orderly and sustainable use and development of air, land and water

Air

The Bell Bay pulp mill project meets and promotes this objective in a number of ways.

The project will meet the air quality guidelines of the National Environment Protection Measure (NEPM) for Air Quality and the Tasmanian air quality objectives in schedules 1 and 2 of the Environment Protection Policy (Air Quality) 2004. The pulp mill will not add to current levels of background air pollution in George Town. Similarly, the contribution of the pulp mill to the local air-shed would be minor and will not exceed air quality objectives.

The best available technology will be used to ensure that the mill will have among the lowest air and odour emissions of any pulp mill operating in the world. The mill will have the world's first three-tier odour abatement system to capture odorous gases. This will make its odour emissions the lowest in the world.

Environmental health analysis conducted as part of the planning process concluded that mill emissions are very unlikely to cause direct health effects, either alone or as a mixture, and that they will have negligible influence on existing air quality in the vicinity. The analysis found that mill emissions will have negligible incremental impact on existing health issues.

Moreover, the mill will be greenhouse gas positive, producing green power eligible for renewable energy certificates.

Land

The pulp mill and other ancillary plant will be constructed on land to be acquired by Gunns adjacent to its existing Tamar woodchip facility. The water supply pipeline and the effluent discharge pipeline will primarily follow the route of existing infrastructure including utilities, transmission pipelines, power lines and road corridors, and through short distances of private land.

With the implementation of Gunns' proposed management strategies (including avoidance and/or minimisation of clearance of native vegetation - particularly threatened communities and species, retention of a seed bank for threatened species, and minimisation of the introduction and spread of environmental weeds) there will be little impact on native vegetation values through the construction and operation of the mill.

In particular, in a major engineering re-design for the effluent pipeline, the strategy was adopted of tunnelling approximately 60 metres under fore-dune sections containing *Xanthorrhoea aff. Bracteata* (Shiny grass tree), a Commonwealth and State listed species.

Similarly, the implementation of management measures (including maintenance of suitable habitat for species impacted by clearing and construction activities, design of fire regimes to maintain biodiversity; and management of clearing activities and machinery to reduce light, noise and dust emissions) will ensure that there will be minimal impact on fauna from the construction and operation of the pulp mill.

In addition, Gunns has created an on-site reserve to maintain approximately 150 hectares of native vegetation, which will maintain a network of habitat for fauna species across the site.

In terms of use of land for pulp mill resource, the mill will process about 3.2 to 4.0 million green metric tonnes (GMt) of pulpwood per year to produce 820,000 to 1,100,000 air dried tonnes of pulp. This amount is less than Gunns' average exports over the past 5 years of 4.7 million GMt per annum.

A mixture of wood from native forests, pine and eucalypt plantations will be used. No RFA-defined old growth logs will be used in the mill. The wood will be sourced from Forestry Tasmania, private forest owners, and Gunns' owned or managed land.

The mill will not cause any changes to forest access or additional intensification of forestry operations. It will instead divert a resource that would otherwise have been exported in chip form to the pulp mill for value-added processing.

Water

Whilst a significant volume of water is required to supply the pulp mill, extraction of this water from Trevallyn Dam will result in an approximately 1% reduction in overall flows to the Tamar River and less than 1% change to total flows down Cataract Gorge. Neither reduction is considered significant in regards to the overall hydrology of the system. Extraction of an approximate average of 1% of the existing water flow from Lake Trevallyn will have negligible impact on the ecology of the lake.

The effluent treatment plant will incorporate the design principles of the most modern primary and secondary treatment plants in operation in the pulp industry. The ECF technology proposed for the mill is BAT under the Stockholm Convention to minimise or eliminate the release of persistent organochlorines. No effluent will be discharged into the Tamar River. Treated effluent will be conveyed by pipeline through a shore crossing near Five Mile Bluff and discharged at an average depth of 25 m,

three kilometres out into Bass Strait in an area with no significant environmental values, limited fishing and recreational use.

All control parameters and emission levels stipulated in the Emission Guidelines (including the final effluent colour and the amount of organic compounds) will be fully complied with because of the mill's use of advanced treatment processes, modern in-plant effluent control measures, and the preferred pulp bleaching technology. The content of persistent organochlorines in the effluent and their relative toxicity within discharged waters will be below detection limits. The estimated metal concentrations at the periphery of the zone of dilution for the effluent discharge are within the background range measured for the proposed location, and there will be no incremental increase in concentrations of metals in biota around the outfall. Consequently, the effluent discharge will not increase human health risk.

Probably due to the harshness of the physical setting and the scarcity of marine organisms, recreational water use near the proposed effluent outfall location is unlikely and has not been observed during marine survey work. Nonetheless, the estimated water concentrations of effluent constituents at the edge of the initial dilution zone do not exceed recreational water guidelines where they exist for a particular substance.

To encourage public involvement in resource management and planning

During the planning for the pulp mill, Gunns conducted a consultation process that involved 252 presentations to community groups, local organisations, businesses and individuals. The information provided by Gunns at these presentations included details of the pulp mill proposal, the IIS process, and the various guidelines that Gunns will follow during the construction and operation of the pulp mill.

The public presentations and meetings provided Gunns with an understanding of the key community issues and the ways by which they could be addressed in the planning process. Wherever possible, Gunns has used input from its community consultation in its planning for the mill and ancillary infrastructure.

Public participation and input into the assessment of the project will continue throughout the integrated assessment undertaken by the RPDC, including comments on this draft IIS and a possible panel hearing. These comments will provide a further opportunity for stakeholders to ventilate their views about the project, test the thoroughness and quality of the impact assessment, and enable Gunns to consider and where appropriate incorporate those comments into the detailed design of the project.

The pulp mill consultation program was complementary to the public involvement associated with the Sustainable Forest Management Statement.

Public involvement will be maintained through the Community Liaison Group (CLG) which will be established prior to the commencement of construction and that will continue its work throughout the operation of the mill. The CLG will distribute relevant and timely information to the community and key stakeholders (such as police, emergency services etc.) and to the public through key tourism channels. A dedicated person will be appointed to coordinate ongoing community and business liaison.

One important responsibility of the CLG will be to participate in the selection of the local residents to participate in the odour monitoring program.

To facilitate economic development in accordance with the objectives set out above

The pulp mill project will result in significant direct and indirect economic benefit to Tasmania, and to a lesser extent Australia. This will occur both as a direct result of construction and operation of the pulp mill and from indirect employment opportunities which arise as a consequence of the project. The commitments to utilise best available technology, accepted modern technology and sustainability principles to minimise negative impacts will flow on to support industries throughout the state, indirectly promoting the objectives of the resource management and planning system.

To promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in the State

In its planning for the pulp mill, Gunns has fully cooperated with local, State and Commonwealth Governments, and a commitment to compliance with relevant resource planning and management arrangements. Gunns has maintained regular and detailed contact with each level of government, and has kept open various two-way channels of communication.

An extensive public consultation process has been implemented, with information being provided to the public by Gunns on the pulp mill proposal, the IIS process, and the various guidelines that Gunns will follow during the construction and operation of the pulp mill. Wherever possible, Gunns has used input from its community consultation in its planning for the mill.

Gunns has actively encouraged Tasmanian business to form local consortia in order to develop the range of expertise and critical mass required to compete for contracts associated with the project's construction. Gunns has provided formal and informal briefings to industry organizations on how the contracts would be structured in order to facilitate strategic alliances between Tasmanian firms and national companies with experience in major projects.

It is estimated that 40 per cent of jobs during the construction phase and around 80 per cent of jobs during the operational phase will be filled by Tasmanians. Discussions have been held with relevant training providers, including TAFE Tasmania, to minimise the impact the pulp mill may have on the availability of skilled labour for other Tasmanian firms.

5.4 Overview of Net Impacts

The Bell Bay pulp mill project will result in both positive and negative impacts on the environmental, social and economic environments at the local, regional, state and, in some instances, national levels. The following summarises the outcomes of technical investigations for the pulp mill and all associated infrastructure.

It is not possible, nor has it been attempted, to reconcile or compare environmental, social and economic costs and benefits.

Where negative impacts have been identified, mitigation and offset measures are proposed. These mitigation and offset measures do not entirely mitigate or offset these impacts, but are a reasonable and proportionate response to the nature and extent of the impact.

Environmental

The net environmental impact of the project is considered to be moderate, more as a result of cumulative impacts than any single environmental issue. Key negative impacts relate to the effects on flora and fauna at the Bell Bay site, and construction impacts associated with the shore crossing and marine environment at the ocean outfall. Off-sets and management plans will reduce the severity of these impacts, but the individual impacts are still considered significant.

Social

The net social impact of the project is considered to be a major positive impact on a state, regional and local level. A small number of individuals will experience negative impacts, either as a result of construction and/or operational impacts. Others may experience cumulative negative impacts. Appropriate planning and consultation with the local community in particular will help mitigate many of the negative impacts, particularly during the construction phase. Some individuals will however experience significant negative impacts regardless of the strategies employed.

Those most affected by the project will be residents located on the opposite bank of the Tamar River to the pulp mill site. These residences will be exposed to construction impacts, day and night for 26 months. They will also experience visual impacts from the pulp mill structures and steam plume. Some residents in George Town may be affected during the peak construction period as a result of the large numbers of workers seeking local accommodation.

Economic

Overall, the project is considered to have a major positive impact on the Tasmanian economy. The project is considered to have a minor positive benefit to the Australian economy.

5.5 Emission Guidelines

The project will meet the background guideline values determined by the National Environment Protection Measure (NEPM) for Air Quality and the Tasmanian air quality objectives in schedules 1 and 2 of the Environment Protection Policy (Air Quality) 2004.

Application of the CSIRO Air Pollution Model (TAPM) to existing background and to mill signal for the Class 1 constituents of NO₂, SO₂ and PM10 shows that the existing background levels at all population centres in the northern end of Tamar Valley Air Shed (TVAS) readily meet the Emission Guidelines.

The TAPM modelling of Class 2 Constituents (TRS, Cl₂, HCl, ClO₂, dioxins) led to the following conclusions relative to the Environmental Protection Policy (Air Quality) 2004:

- ▶ Chlorine and chlorine dioxide levels for 99.9% of the time are contained on site, and are below 10 µg/m³ (the Emission Guideline).
- ▶ Hydrochloric acid, for 99.9% of the time, does not exceed 3 µg/m³ (30% of the Emission Guideline).
- ▶ Levels of Total Reduced Sulphurs (TRS) (odour) will exceed the Emission Guideline only once in every 50 years on average. This exposure is considered acceptable given that the issue is amenity (odour) rather than toxicity.

Modern pulp mills have reduced the absorbable chlorinated organic compounds (AOX) component of the waste stream to very low levels, with dioxins and furans decreasing by more than 99% over the past decade. For 99.9% of the time, the level of dioxins will be 1000 times less than the permitted levels under the State Air Quality Guidelines.

The designers of the Mill had a choice in powering the lime kiln between using coal or bunker oil, or using natural gas, the more environmentally friendly option. On environmental grounds, Gunns chose natural gas.

The unintended consequence was that it will increase the level of the less-harmful nitrogen oxides (NOX) at the stack emission point to a level which exceeds the Emission Guideline, but will at the same time reduce emissions of the more-harmful sulphur oxides (SOX). In all other cases, atmospheric and marine emissions will comply with the Emission Guideline levels.

5.6 Conclusions

In considering the net impact of the Bell Bay pulp mill project, the following conclusions have been reached.

The environmental effects of the project are spatially diverse but localised. Whilst the values of the Bell Bay site have been recognised as potentially of state significance, this is in part due to the detail of the flora survey undertaken. Similar values are expected for the larger areas around the Tippogoree Hills. Studies indicate that marine impacts will be localised around the outfall within a defined mixing zone.

Social effects will be wide-spread and potentially benefit most Tasmanians, either directly or indirectly. A small number of people will experience significant direct negative impacts from aspects such as noise, visual, accommodation or from the negative impacts of the large workforce which will require local accommodation. Whilst management strategies will be in place for all these impacts, they will not be able to totally mitigate affects, and in some instances, not at all.

The economic impacts are directly linked to the positive social impacts from the project. A large number of jobs will be created, both direct and indirect. The project will increase gross State product as well creating benefits to local and regional transport, engineering, training, construction and IT sectors.

In the remainder of the combined assessment and approvals process, the Assessment Panel will evaluate Gunns' assessment of the proposed pulp mill project and the effectiveness of its proposed management measures.

Specifically, the panel will have opportunities to:

- ▶ Hear submissions and evidence on the proposal from interested parties, including Gunns' and its expert advisers, and ask them questions to test their opinions and views;
- ▶ Consider written submissions on the proposal;
- ▶ Consider whether the planning priorities that underpin the proposal have been correct and supported by the information and analysis presented in the Draft IIS;
- ▶ Consider the project's residual impacts against its broader benefits; and

- ▶ Having regard for these and other matters, including statutory requirements, the panel will make recommendations to the Commonwealth and Tasmanian governments. The governments will determine whether or not the project proceeds and, if so, under what conditions.