The Pulp Mill Revisited

A January 2011 Update to Analyses by Naomi Edwards

Executive Summary

The report is a brief update on my earlier analyses on the likely financial viability of the Bell Bay Pulp Mill. Those analyses concluded that, despite a significant freight advantage, Bell Bay would struggle to compete internationally because of a higher fibre input cost and a strong Australian dollar.

I have now updated the analysis to reflect:

1. The intention to move the pulp mill to 100% plantation fibre from day one.
2. The persistently high Australian dollar against the USD.
3. The increase in expected cost to build the pulp mill to around $2.5 billion.

It is likely that the move to plantation fibre will *not* greatly increase the fibre cost at the mill. The majority of fibre is owned by MIS investors (in both Tasmania and Victoria). For fibre sourced from Great Southern woodlots in Victoria, and from Gunns woodlots sold prior to 2005, there is scope to keep the fibre cost low through paying a low return to the MIS investors.

Investors in Gunns woodlots after 2005 have a floor price mechanism that protects their returns and likewise make it more difficult for the mill to run competitively using their fibre. The stumpage payable to Forestry Tasmania is much higher for state plantation fibre than native forest (say, $30/t versus $13/t). However, offsetting the higher stumpage of the plantation fibre is the lower harvesting cost, the lower transport cost (shipping across Bass Strait is cheaper than hauling up from the Southern Forests) and the higher pulp yield per tonne of green wood.

Most economists are now forecasting a persistently high Australian dollar against the greenback, at least in the medium term. This is because of the growing correlation between commodity prices, Chinese demand, the AUD and the terms of trade. Links between the AUD and Chinese indicators are tightening. This link to China, combined with persistent USD weakness and periodic dramas from Europe, have lifted medium range forecasts to between 90 cents and parity for the AUD. This spells very bad news for Gunns which has persistently used an exchange rate of around 77 cents in its public illustrations of pulp mill competiveness.

The expected cost to build the pulp mill now seems to be in the $2.5 billion range. This is high compared to recent build costs for mills in South America and will create a long term drag on the mill profitability.

My earlier analysis regarding the cost un-competitiveness of the mill is therefore unchanged (or, perhaps, strengthened) by these changes. I should note that this is not a view shared by Gunns. Gunns continue to say the mill will be cost competitive and in November 2010 the company took this message even further, by stating that participants in the due diligence process believe that the financial outlook for the project is strong and that the project is globally competitive in the growing Asian eucalyptus pulp markets.

1 Introduction

This report updates previous analyses[1][2][3] I have prepared into the financial viability of the Bell Bay Pulp Mill. Since preparing those reports a number of things have changed that will affect the pulp mill financials. These include:

1. The pulp mill will be run on 100% plantation fibre from commencement.
2. Gunns has acquired the management rights to 122,000H of plantation timber in Victoria. In conjunction with this, the Portland woodchip export facility is now operational (to transport chips from Victoria to Bell Bay or elsewhere).
3. The estimated cost to build the pulp mill has increased from $2.2bn to $2.5bn.
4. The AUD/USD has traded high for sustained periods and forecasts are now for a sustained long term high AUD, perhaps at parity.
5. Pulp prices have traded high for some time. The BHKP China index was USD$742 at 28 December 2010, up $80 since the start of the year. However the pulp price is a notorious roller coaster having been as low as $450 as recently as April 2009.

This report looks at the impact of these changes on my earlier financial analyses.

2 External views on the financial viability of the pulp mill.

Gunns has been seeking an investor for the pulp mill for over five years and has as yet failed to secure one. A large number of local and international companies have conducted due diligence on the mill and have not found the financial story compelling.

Nonetheless, Gunns has continued to tell its shareholders that the mill will be internationally cost competitive. In November 2010 the company took this message even further, by stating that participants in the due diligence process believe that the financial outlook for the project is strong and that the project is globally competitive in the growing Asian eucalyptus pulp markets[4].

Given this optimistic view, shared by Gunns and its prospective investors, the question arises as to why Gunns' views should be questioned, given Gunns much great access to information regarding the pulp mill. My reasons for continuing to pursue independent analysis are as follows:

1. Little has been published on Gunns own cost analyses for the mill. The normal cost curve published by Gunns uses an AUD/USD rate of 0.77 which is significantly below most medium range forecasts (and therefore overstates the cost competitiveness of the pulp mill).
2. The KPMG Independent Auditor's Report to the 2010 accounts draws attention to the recoverability of the $205 million of capitalised pulp mill expenditure. The Audit Opinion states that recoverability is "dependent on a number of key assumptions, including that financing will be obtained for the project and that the project is commercially viable". In other words Gunns has failed to convince its auditors that the commercial viability of the pulp mill is a fact.
3. No investor or financier has yet committed to the project.

[1] Naomi Edwards, April 2008 *Mill Competitiveness Falls* Personal briefing paper for GNS institutional investors
[2] Naomi Edwards, April 2007 *Major Risks Ahead for the Environment and Gunns investors*, co-authored with TWS
[3] Naomi Edwards, Sep 2006, *Too Much Risk for the Reward* Personal Submission to the RPDC
[4] Managing Director address to 2010 AGM, 25 November 2010

3 Summary of Pulp Mill Competitiveness

The table below summarises areas of pulp mill relative competitiveness.

Table 1 Factors affecting Bell Bay's Position on the Cost Curve

Cost component	Bell Bay advantage or disadvantage	Comment	Cost impact measured in $/adt of pulp (see below for details)
Mill construction cost	☹	At $2.5bn to build, the average cost to build is $2,045/t. This compares with $1,200/t for Aracruz Guaiba Unit start-up in 2010. This high initial cost will need to be recovered over the life time of the mill.	+$40
Fibre costs	☹	I estimate below that fibre costs for the mill will be about AUD$244/adt. With exchange rates at parity, this is significantly more than the low cost South American producers whose fibre cost is only $140 to $160/adt.	+$90
Chemicals, water, energy	😐	While chemicals and water will be similar in price, the pulp mill is being built to generate an additional 62MW of power for sale into the grid.	+0
Labour, maintenance	😐	Labour costs in Australia are significantly higher than in South America or Asia. However the mill will be latest technology meaning lower labour and maintenance requirements.	+0
Freight cost to China	☺	Australia is significantly closer to China than South America. As oil prices rise, so does the freight advantage.	- $30
FX Impacts	☹	The AUD is strengthening its linkage to the China economy which means it is likely to stay very strong against the USD.	+$0
Overall position	☹	The mill will certainly be more cost competitive than mills in Europe and North America. However compared to the low cost producers it will be much more expensive – up to $100/t more expensive than the lowest cost Brazilian producers. These will be its competitors in the future.	**+$100**

The key to Bell Bay's financial viability will be its position on the international cost curve. With exchange rates at parity, the fibre costs alone add an additional $90 to each tonne of pulp produced at Bell Bay as compared with low cost South American producers. This extra fibre cost can be confirmed in a number of ways – RISI's 2010 report included a comparison between Australian FOB woodchip prices in 2009, at USD$192/bdmt and Chilean FOB woodchip prices in 2009, at USD$122/bdmt. Extending this USD$70 South American advantage to the pulp mill (and recalling that just under 2 tonnes of woodchips are needed for every tonne of pulp) would give Chile a USD$140 fibre input cost advantage over Bell Bay, making the $90 used above conservative.

Adding the additional cost to build the pulp mill, and allowing for the freight advantage the mill will have, the mill production cost will be significantly higher (in the order of $100/adt of pulp) than its low cost competitors.

4.0 The Shift to 100% Plantation Fibre

This is a major shift impacting nearly every aspect of the mill's operations. The table below summarises some of the impacts:

Table 2 The Shift from Native Forest to Plantation Fibre

	Native Forest fed mill	**Plantation fed mill**
Fibre location	Tasmania	Tasmania and Victoria
Fibre suppliers	Forestry Tasmania mainly	MIS Plantation Growers, Gunns Freehold and FT
Fibre harvesting and transportation	Tasmanian harvest and haulage contractors – large numbers of small operators driving all over the state	Ships from Portland and a small group of larger contractors working mainly in the North of the state
Fibre cost	$12.50 to $19.20 per GMT	$20 to $39 per GMT
Fibre quality	Low quality meaning that over 500,000 ha required to feed the mill	Higher pulp yield – up to 55% - from plantation timber
FSC Certification	Impossible	Possible

4.1 Does Gunns have access to enough plantation to feed the mill?

Gunns has access to some 330,000 ha of hardwood plantation. The table below shows the location and ownership of these plantations.

Table 3 Gunns' Plantation Pulp Sources

	Ownership	**Hectares (ha)**	**Location**	**Fibre cost per GMT**
Gunns woodlots pre 2005 (no Floor mechanism)	GPL MIS Investors	39,000	Tasmania	$30
Gunns woodlots post 2005 (with Floor mechanism)	GPL MIS Investors	66,000	Tasmania	$39
Great Southern woodlots	GS MIS Investors	123,000	Victoria	$20 – after "fees" at harvest
Gunns Freehold	Gunns	27,000	Tasmania	$30
Gunns JV's (Tasmanian Forest Holdings, Plantation Platform Tasmania)	Various (Japanese companies, FT)	19,000	Tasmania	$30
Forestry Tasmania supplied under LTPSA	State Forest	56,000	Tasmania	$30 minimum
Total		330,000		$28 weighted average

This 330,000 ha is enough plantation to feed the mill. Gunns have stated that the mill will require 3.8 million GMT to run at full capacity (producing 1.1 million ADT of pulp).

The number of hectares needed to produce 3.8 million GMT of fibre depends on the growth rate of the forest. There is increasing published evidence that the actual growth rates of Australian plantations are significantly less than had been anticipated. Most investment was originally made on the basis that Mean Annual Increment (MAI) growth would be around 20 m3/ha/yr, and in some cases up to 30 m3/ha/yr. However, in late 2008 there was increasing evidence, including some published information, that much of the earlier plantings are not achieving anything close to these growth rates. Indeed, pre-inventory data collected by one firm suggests that the average MAI at age 10 is more like

14.5 m3/ha/yr (a 40% reduction on earlier expectations), with a range from 8.5 to 23.5[5]. Future MAIs could increase with better stock and better management and future hardwood plantation harvests could increase quickly past 2010, but by how much?

If we assume a long term MAI of 14.5m3/ha/yr, then a plantation estate of about 260,000H would be needed to run the pulp mill at full capacity. This can be compared with quantities needed in some other countries:

Table 4 Hectares needed to run a pulp mill depend on growth rates

Country	Hectares to run 1.1m adt pulp mill
Brazil	110,000
Spain and Portugal	330,000
Nordic Countries	792,000
Bell Bay assumed	260,000

Such quantities are not, of course, available today from the 330,000 ha of plantation available to Gunns but they should be by the time the pulp mill is operational and fully ramped up. For example:

1. Gunns said at the time of purchase of the Great Southern plantations that they expect the harvest to increase from approximately 540,000 GMT in the 2010 financial year progressively to approximately 2.8 million GMT in the 2017 financial year.
2. The Bureau of Rural Sciences has forecast that Tasmania should currently be capable of generating just under 3.0 million GMT with this number rising to 4.0 million by 2015. Most of this fibre would be available to the Bell Bay pulp mill.

4.2 What will the plantation fibre cost the mill?

Gunns will have the challenge to manage its plantation estate for four purposes:

1. To feed the pulp mill as cheaply as possible
2. To export excess plantation timber as woodchips at as high a price as possible
3. To manage relations with MIS growers
4. To remain a preferred buyer of third party plantation owners (e.g. Forestry Tasmania or Private Timber Reserve owners).

These purposes are often conflicting. The most expensive stumpage will be that purchased from GPL woodlot investors after 2005 – these have a guaranteed floor price mechanism of 39% of current FOB woodchips rates, which in the current environment gives a stumpage of about $39/GMT. Forestry Tasmania's minimum stumpage as per the LTPSA is much cheaper, at $30/GMT, but this goes up as pulp prices go up. MIS growers with no floor mechanism (including all Great Southern growers) are in the worst position of all, with a 50% "fee" taken from the harvest proceeds at harvest time and no guarantee as to market definition. If we assume a market price at harvest of around $30/GMT then these growers can expect to receive as little as $15/GMT. The fee depends on the woodlot year, so for simplicity we have assumed an average payment to Great Southern growers of $20/GMT.

Making the simple assumption that the pulp mill is fed proportionally from all available plantation sources gives an average stumpage of $28/GMT to the mill, or $97/adt of pulp. This is considerably more than the $13.5/GMT stumpage that would have been payable for state native forest under the LTPSA.

[5] RISI 2010 The International Pulpwood Trade Review

To the stumpage cost must be added the cost of transport to the mill. In previous reports, I estimated the additional costs for plantation forest managed by Gunns as $29/GMT[6] and for FT sourced plantation as $37/GMT. This covers road tolls, supervision and administration, harvesting and cartage for Tasmanian sourced fibre.

The transport cost for Victorian fibre is slightly, but not significantly, more. Woodchips will probably be transported from Portland in Gunns' woodchip carrier, the Orana, on a regular milk run basis. The Orana, built in 1991 with a capacity of 45,000 tonnes, is probably getting near the end of its life span (similar woodchip carriers built in 1988 are already being retired). However the Orana will have the capacity to transport the Victorian woodchips to Bell Bay quickly and cheaply - estimated at $4/GMT given the sailing is so short.

Adding this to the $29/GMT transport costs above gives a transport cost of $33/GMT for Victorian fibre, slightly more than Tasmanian plantations owned by Gunns but less than FT plantation costs. We can use an average transport cost of $33/GMT for plantation fibre to the mill.

The total fibre input cost to the mill is therefore around $61/GMT ($28/GMT stumpage plus $33/GMT other costs). This is not significantly different to the estimate of $64/GMT from my previous analyses using native forest fibre.

This is because:

1. I have assumed that on average Great Southern growers receive only $20/GMT for their wood.
2. I have assumed that harvesting and cartage costs are much lower for plantation timber, down from $51/GMT for state native forest to an assumed $33/GMT for Gunns managed plantations.
3. I have assumed that Victorian fibre can be shipped across Bass Strait for only $4/GMT in the Orana.
4. I have assumed that all other growers receive only $30/GMT which is the same as the floor price for Forestry Tasmania plantation pulp under the LTPSA.

Using this figure of $61/GMT of fibre gives a cost of $244 per tonne of pulp as fibre input cost. By comparison, fibre input costs in Brazil and Chile are in the $140 to $160 range. Bell Bay fibre input costs will therefore exceed best cost producers fibre input costs by $80 to $100 at exchange rate parity.

5 Cost to Build the Pulp Mill

The estimated cost to build the pulp mill has risen steadily since it was first conceived. Company estimates have been as follows:

	Sep 2006	July 2007	Mar 2008	Oct 2010	Dec 2010
Estimated Cost to build A$ billion	1.4	1.5	2.0	2.3	2.5[7]

The rise in estimated cost to build in Australian dollars is especially surprising given the strong rise in the Australian dollar over the last four years and the fact that most of the pulp mill components will be imported. This should have implied a falling projected price to build.

[6] Table 2.6, Mill Competiveness Falls while subsidies rise, Edwards April 2008

[7] ABC News, Dec 4 2010, Interview with Greg L'Estrange, Managing Director Gunns

Every additional $100 million of cost to build saddles every tonne produced with an extra cost of $8/tonne. The increase in mill cost from $2.0 billion to $2.5 billion (both figures based on 1.1 million adt capacity) has added at least $40/tonne to mill costs.

6 FX Impacts on the Mill

The cost competitiveness of the mill is very dependent on the relationship between the Australian dollar and the US dollar. This is because income is generated in USD but costs are in AUD.

The table below gives an example of this, by looking at the level of annual profit generated by the mill under different exchange rate scenarios[8]. These numbers use EBITDA as the measure of profit and were prepared at a time when the pulp spot price was at USD$470 but it is the range that is of interest.

AUD to USD	*60 cents*	*70 cents*	*80 cents*	*90 cents*	*100 cents (parity)*
Forecast EBITDA in AUD$ million	337	242	171	115	70

An investor may be willing to invest $2.5 billion in a project to return $337 million per annum, but not to return $70 million per annum. So what is the exchange rate going to do?

Forecasting exchange rates is nearly impossible. However in the last year the dollar has settled a little (trading in a 20¢ range against the US dollar, compared to a range of 37¢ and 30¢ in the prior two calendar years). More importantly, it seems that the Chinese cycle is now replacing the USD trend as the key external determinant of attitudes towards the Australian dollar. The correlation between commodity prices, Chinese demand, the AUD and the terms of trade is growing. Links between the AUD and Chinese indicators are getting stronger. Even allowing for the tightening of the Chinese monetary policy stance, most economists are now of the view that the AUD will remain strong for at least the medium term[9].

This spells bad news for the pulp mill. Of course the other side of the coin is the USD pulp price, which is currently very high at $740. As long as this stays high, the high AUD is less of a concern. But the pulp market, as discussed in previous papers, is a notorious roller coaster, much more so than exchange rates, and the risk is that the pulp price swings low while the dollar stays high. With the linkage between China and the AUD as discussed above, this is a very real possibility.

[8] JP Morgan, April 2009, Revisiting the Economic of the Mill

[9] See, for example, Westpac's Market Insights Dec 2010 and Jan 2011