

Plantation promises stretched to breaking point - What happens when the Prospectus assumptions hit the ground?



**Evidence to Senate Inquiry into
Plantation Forestry – Tuesday
29 April 2003 – Hobart**

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1. Executive Summary

- I. This report considered the assumptions used in recently issued plantation prospectuses. It uses Gunns Plantations Limited Woodlot Project 2002 as a case study ("the GPL Prospectus").
- II. The potential discrepancy between prospectus promises and eventual returns may have serious implications for the savings of plantation investors.
- III. Prospectus assumptions appear to be set outside of currently achieved pricing levels. Prospectus assumptions in 2001 /2002 were in the range of \$32 to \$50 per cubic metre stumpage.
- IV. Recent stumpage prices paid are in the order of \$18 to \$30 per cubic metre for plantation hardwood.
- V. Plantation wood will also compete with native hardwood pulp which is currently paying \$11 to \$12 per tonne. Gunns Limited currently achieve a profit margin of about 25% on their woodchip business – paying GPL growers \$32 per tonne as promised in the GPL Prospectus would slash Gunns Limited profit margin to 16%.
- VI. Assumed real growth rates for stumpage prices also appear to be optimistic in the prospectuses. Real growth assumptions are up to 1% growth compared to the actual fall experienced over the last 20 years of negative –1.4% per annum real return.
- VII. The combination of high assumed starting stumpage prices and high stumpage price growth rates leads to high projected internal rates of return (IRRs). Using the GPL Prospectus as a case study, IRRs of between 9% and 13% are projected for Option 1, whereas using an assumption set based on recent experience gives an IRR range of 2% to 9.5%.

These findings are fully explained in the rest of the report, as well as the assumptions in the model.

2. Introduction

There is now over \$2 billion invested in the Plantation Prospectus industry. While small as a percentage of total superannuation funds in Australia (only 0.4% out of \$505.7 billion) the amount is growing rapidly in both absolute and relative terms. Investment houses have rated the plantations as AA+ or AAA even for investors with high risk aversion. This is because, even on the low sensitivities shown in prospectuses, the returns are still very high.

This report considers the assumptions used in recently issued plantation prospectuses. These assumptions drive the projected returns and hence investors' and rating agencies' expectations about plantation investments.

The report uses Gunns Plantations Limited Woodlot Project 2002 as a case study ("the GPL Prospectus"). It also uses 10 prospectuses and assumption sets published over 2001/2002 and summarized by Lonsdale Securities.

The report has been prepared for the Senate Inquiry into Plantation Forestry and should not be considered financial advice or actuarial advice. The report is not for distribution without the express consent of the author who makes no claims regarding its contents.

3. Prospectus assumptions

Grower returns are driven by three assumptions:

1. Mean annual increment (MAI) – a measure of the site's growth potential per annum per hectare. This leads to the yield per hectare at the time of harvest.
2. Stumpage returns in today's prices – the assumed starting point for the stumpages. These are normally expressed in dollars per cubic metre, and are different for final clear felling (the more important assumption) and thinnings (less important).
3. Future growth rates for stumpage returns.

This report analyses two of the key assumptions – the stumpage returns in today's prices and future growth rates for stumpage returns. The first assumption – MAI – is outside my area of expertise and heavily dependent on site quality.

The report uses the Gunns Plantations Limited Woodlot Project 2002 as a case study. Many of the assumptions in the GPL Prospectus are more conservative than the assumptions in other companies' prospectuses. The findings of this report would therefore be exacerbated when looking at other prospectuses.

GPL Option 2 returns are also dependent on a fourth assumption. That is the eventual proportion of wood suitable for veneer versus pulp. The implicit assumption in the Prospectus is that 40% of the wood will attract premium veneer prices. The 40% assumption is not stated anywhere in the Prospectus or alluded to – it can only be derived by back solving from the GPL projected returns. The assumption is however important as it drives the premium GPL Option 2 return. The absence of any discussion or justification for this 40% assumption is noteworthy but a discussion of its reasonableness is also outside the scope of this paper.

4. Stumpage returns (today's prices)

Stumpage returns in today's prices are the assumed starting point for the projections. A lay reader might assume the starting point to be factual, based on actual prices. But is this the case?

The GPL Prospectus assumption for stumpage returns in today's prices for final clear felling is \$32/cum and for thinnings is \$28.10/cum. Thinnings make up less than 20% of the total harvest.

These are "Directors' Assumptions", adopted by the Directors of Gunns Plantations Ltd after consideration of factors determining the assumption. The Directors do not disclose what stumpage prices GPL or Gunns are currently paying.

The assumptions have then been reviewed by Deloitte Touche Tohmatsu, after discussion with the Directors and reliance on the Independent Foresters' Report. Deloitte give no detail as to their derivation. For that we must look to the Independent Forester's Report included in the prospectus.

Extract from the Independent Foresters report:

[Note this is the only paragraph in the 180 pages of documentation accompanying the 2002 Woodlot Prospectus that puts any numbers to current stumpage returns].

"7.2 Eucalypt Pulpwood

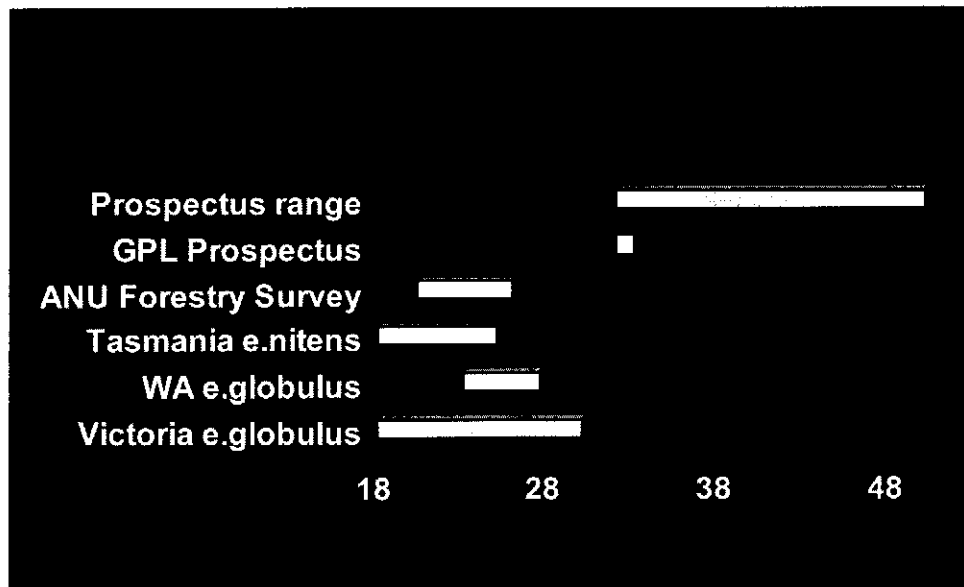
In the GPL Woodlot Project 2002 the opening price is \$28.10 per cubic metre. ***[Incorrect. \$28.10 is the thinnings price. The more important final price is \$32 which the Independent Forester seems unaware of].*** The current price that is offered by a company for 20-year-old plantation *Eucalyptus globulus* in Victoria is a mill gate price of \$45 to \$55 per cubic metre. With harvest and transport costs of \$25 this amounts to a stumpage price range of \$18 to \$30. ***[Note that these prices are for wood which was seven years older than the GPL Option 1 wood of 13 years. The upper end is still below the GPL \$32 however].*** In Western Australia there are stumpage prices being paid to growers of \$23 to \$27.50 per cubic metre for plantation grown *Eucalyptus globulus*. These stumpage ranges are dependent on overall volume offered, individual tree size of the resource and distance from the processing mill. ***[Again, the range is below the GPL \$32].*** Recently a premium price of \$20 per tonne (\$21 per m³) stumpage for *Eucalyptus nitens* thinnings has been paid in northeast Tasmania. ***[Note \$21 is the "premium" thinnings price being paid, compared to the GPL assumption of \$28.10 as the best estimate thinnings price].***

Final crop *Eucalyptus globulus* and *Eucalyptus nitens* in Tasmania has fetched between \$18 and \$25 per cubic metre for small volumes. Hence for a large volume of either final crop *Eucalyptus globulus* or *Eucalyptus nitens* offered on a contract for a consistent supply basis it is possible that a price of \$28.10 could be achieved in a similar market. ***[Perhaps it is possible that \$28 "could" be achieved, but the GPL central assumption is for \$32].*** GPL are also proposing to manage the plantation for a longer period than other plantation project managers propose and this will provide a better pulp yield from the

slightly older wood, as in Victoria, and be a market advantage. **[Option 1 will be seven years younger than Victoria].** "

While the GPL Prospectus assumption of \$32 may seem high compared to evidence, it is low compared to other Prospectus assumptions surveyed by Lonsdale Securities, where prices ranged from \$32 to \$50.

The Independent Forester's report and the prospectus assumptions described above can be summarized as follows:



Note that I have added to the graph the range of stumpage prices published in the last 12 months in the ANU Forestry Market Survey.

Looking at the current stumpage prices, a layman might pick a "best estimate" of around \$24/cum. So how does the GPL Prospectus get to \$32/cum, a 40% stretch over its own examples?

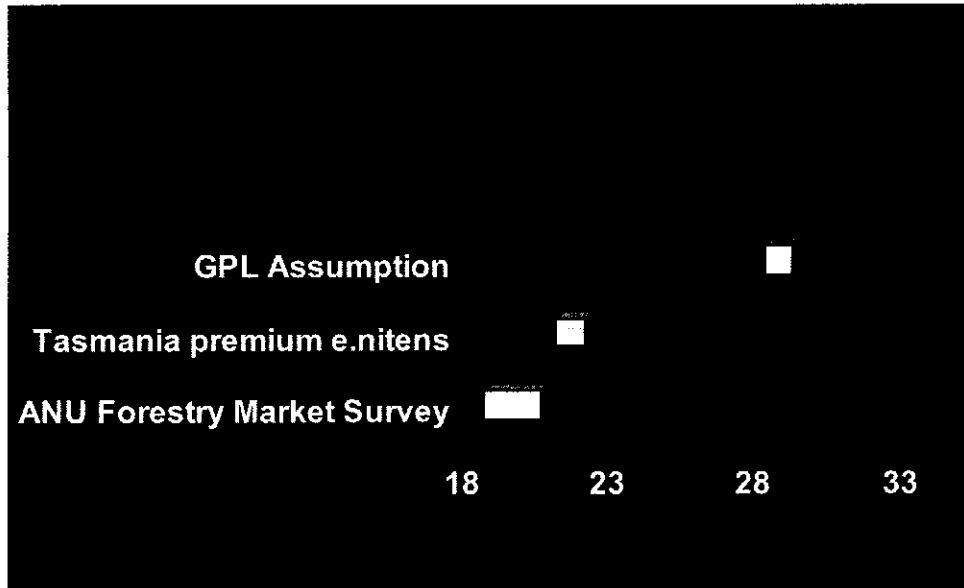
1. The Independent Forester argues that the stretch is justified by "the known premium price paid for plantation wood over older wood in native forests". This is misleading, given that the stretch shown is against other plantation wood prices, not native forest prices.
2. The stretch could be delivered if "the supplier can maintain high volume, good quality and constant supply". This begs the question – were the WA, Vic and Tasmanian prices quoted all for low volume, low quality and irregularly supplied pulp? WA's world acclaimed plantation producers may be bemused by this.

No reference is made to the impact of Gunns' monopoly buying power and its impact on the stumpage prices paid to GPL growers. In classic economic

theory, this monopoly buying power would be expected to offset any advantage the growers may have of a large supply.

There may well be other factors driving the \$32/cum assumption which are not revealed in the Prospectus, and which were known by the Directors, Deloitte and the Independent Forester. If so, none of this information is disclosed in the Prospectus.

Similarly, the thinnings price assumption is outside any reasonable range:



Again, I have added the range of thinnings prices quoted in the ANU Forest Market Survey to the graph.

5. Stumpage price analysis for Gunns – a case study

A second way of looking at the reasonableness of the \$32/cum assumption is to compare it to the price currently being paid by Gunns Limited to purchase pulp wood. Gunns currently purchase around half of their pulpwood from Forestry Tasmania and half from other sources (freehold land, private timber reserves and so on). Most of the pulpwood is native forest wood. Native forest hardwood competes with plantation hardwood, although it tends to be of a lower quality.

Gunns Limited, who will be the buyers of the GPL hardwood, currently pay an average of \$14 to \$16 per tonne for pulp logs. (John Gay, CEO Gunns Limited, *The Examiner*, 3 December 2002). These figures are slightly higher than the average price paid to Forestry Tasmania for native wood, which is \$11 to \$12 per tonne (Evan Rolley, CEO Forestry Tasmania, *The Mercury* 16 January 2001). For simplicity sake, we will assume that Gunns Limited are currently paying \$15 a tonne for hardwood pulp.

We must convert the GPL Prospectus promise (per cubic metre) to a tonnage value. While the ratio of cubic metre to tonne varies with moisture content, an average conversion factor would be 1.05 Green Metric Tonne (GMT) per cubic metre. Thus the GPL Prospectus promise of \$32/cum is equivalent to \$30.48 per tonne.

Gunns Limited currently sell their wood at a free on board (FOB) rate of A\$156 per bone dry metric tonne (BDMT). This is the 2003 LAHCE index price (the price negotiated each year in Australian dollars between Australian wood sellers and their buyers.) A sale price of \$156/BDMT is equivalent to \$83.74 a tonne using a conversion factor of 53.68% (Jenkin 2003).

Gunns believe they will continue to receive a premium for plantation (rather than native) wood. In the GPL Further Supplementary Prospectus dated 25 June 2002 GPL state that "The price achieved by Gunns Limited for plantation grown hardwood woodchips is based on the price paid for woodchips from native forest plus a premium which is currently approximately 11%". This accords with industry experience that the plantation premium is in the range 10% to 15%. Adding this selling margin of 11% to the price Gunns currently receive for native forest hardwood gives a free on board price of \$92.95 per tonne (based on \$83.74 plus 11%).

Finally, Gunns Limited currently achieve a 25% profit margin on their woodchip business (EL&C Baillieu Stockbroking Limited, Report on Gunns Limited, April 2001). Profit margin here is defined as the EBITDA margin which is the earnings margin before interest, tax, depreciation and amortization.

Why is this relevant to the prospectus promise? Put simply, Gunns cannot afford to both maintain its profit margins **and** to meet its promise to buy GPL

wood for \$32/cum (or \$30.48 per tonne). One of these must give. Consider the table below.

	Situation today – Gunns' current prices, profit margins, LAHCE and cost structures.	Prospectus promise – growers receive \$30.48 per tonne of wood. Gunns receive LAHCE plus 11% plantation premium.	Gunns maintain current profit margins and pay GPL growers the residual. Gunns receive LAHCE plus 11% plantation premium.
	\$/Green metric Tonne	\$/Green metric Tonne	\$/Green metric Tonne
Returns, FOB woodchip price	\$83.74	\$92.95	\$92.95
Shares as	broken up as...	broken up as...	broken up as...
Stumpage paid to wood grower	\$15	\$30.48	\$21.91
Transport, chipping, screening and loading costs	\$47.80	\$47.80	\$47.80
Profit to Gunns Limited (EBITDA)	\$20.94	\$14.67	\$23.24
Profit margin (EBITDA)	25%	16%	25%

The first column is the situation today. All of the figures are independently verifiable and consistent with a large number of published papers. Gunns Limited pays \$15 per cubic metre for pulpwood and is making a 25% return.

The second column considers the prospectus scenario where Gunns Limited purchase wood from GPL growers for \$30.48 per tonne (\$32/cum) and receive an 11% sale premium. Gunns' Limited profit margin is almost halved. Why would Gunns Limited do this? Would Gunns Limited shareholders permit this?

The third column considers what happens to GPL growers if Gunns Limited decides to maintain its current 25% profit margin. Gunns Limited can only afford to pay growers \$21.91 a tonne (or \$20.87 per cubic metre). Grower returns are slashed.

To repeat, Gunns cannot afford to both maintain its profit margins **and** to meet its promise to buy GPL wood for \$32/cum (or \$30.48 per tonne). One of these must give.

6. Stumpage prices (future growth rates)

The GPL Prospectus assumes a 3% pa compound growth rate for future prices, in line with inflation. By describing the 3% growth rate as inflationary, this translates to holding the pricing assumption steady in real terms.

But will the commodity grow in line with CPI? And is 3% the best estimate for CPI growth over the next 13 years?

Forecasting inflation rates and commodity prices are two of the most difficult and controversial areas of forecasting. The Lonsdale survey shows that Plantation Prospectuses are using a range of 1.8% to 4% for CPI, and nominal growth rates for stumpage prices of 0.6% to 4.5%.

Is 3% CPI a best estimate assumption?

The Reserve Bank of Australia has an inflation target of 2% to 3% for the Australian economy, and has stated that it will manage monetary policy to keep inflation within that range. Recently inflation has tracked at the bottom end of the range. The weak global economy will push the balance of risks for Australian growth and inflation to the downside. But this is over the short term only.

For a longer term central assumption, it is difficult to go past the RBA's central assumption (2.5%) as a best estimate. This also agrees with the only change made by PIR Agribusiness research in reviewing the GPL Woodlot Project 2002. PIRA lowered the central inflation rate to 2.5%.

Interestingly, the median rate being assumed by other Plantation Prospectuses is 2.8% with some using rates as low as 1.8%.

Will stumpage returns grow in line with CPI?

A recent paper by the ANU Forestry Market Report attempted to answer this question by surveying recent literature. The report examined six papers written on the topic. Three papers predicted a fall in real prices and three predicted a small gain. Three of the four most recent papers predicted a fall in real prices.

What has happened recently to prices? There is no public record of plantation hardwood stumpage prices movements, so we need to look at either native pulpwood stumpage returns or at hardwood chip prices to answer this.

The ABARE Australian Commodity Statistics 2002 (published January 2003) tracked average free on board unit prices for Australian exports of native hardwood in green metric tones. Comparing these prices with CPI rates over the same 20 year period (1981/2 to 2001/2) we can derive an annual fall in

real hardwood prices of 1.4% per annum. While 1.4% is a small decrease over a year, it delivers a 32% real price fall over a 20 year rotation.

These ABARE figures accord with recent published trends by the ANU Forestry Market reports and by Clark (2000) which show a fall in real prices of 1.1% annually over the 17 year period to 1998. The most recent four year experience has pulled the average down even further as there has been a surge in Australian exports and consequent price reductions to clear the market.

Interestingly, the GPL Further Supplementary Prospectus dated 25 June 2002 states that "Historical wood price data collected by Gunns Limited over the course of a 30 year period demonstrates that in real terms the price obtained by Gunns Limited for hardwood woodchips over that period has fluctuated, but the long term trend has been for the price in real terms to *remain relatively flat.*" [My italics].

For Gunns' statement to be consistent with the ABARE statistics, it has either significantly outperformed the Australian market (although note that it comprises nearly two thirds of this market) or the 30 year trend is very different to the more recent 20 and 10 year experience.

Empirically, the data does not support stumpage returns keeping up with CPI. The data would certainly not support stumpage returns keeping up with a "stretched" CPI assumption.

So what would be a better assumption? We cannot go past looking at a 1.4% fall in real prices as a possibility. After all, that is the most recent 20 year experience. Equally, we should consider a stable real return against a realistic CPI assumption and a worst case scenario of, say, a 2% real annual fall.

In the sensitivities below, I have used a CPI figure of 2.5% and a range of real growth rates from -2.0% to +1.0%. There appears no support for a scenario in excess of almost level real prices.

7. Reworking the Projections

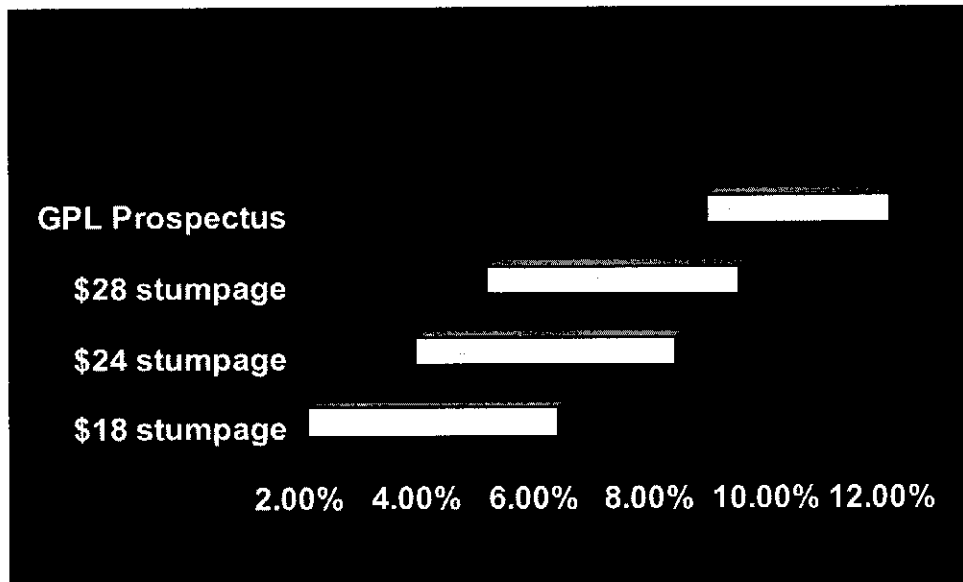
In order to assess the impact on returns from the revised assumptions, I constructed a model of Grower returns. The model replicates the GPL Prospectus returns when the GPL assumptions are input, so is thus using an identical methodology.

The model was run on 12 scenarios for Option 1 and Option 2 from the GPL 2002 Woodlot Project. The scenarios examined were combinations of the following:

Stumpage prices (today) for final clear fell	Stumpage prices (today) for thinnings	CPI	Real stumpage price increase per annum
\$18	\$18	2.5%	1.0%
\$24	\$20		-1.4%
\$28			-2.0%

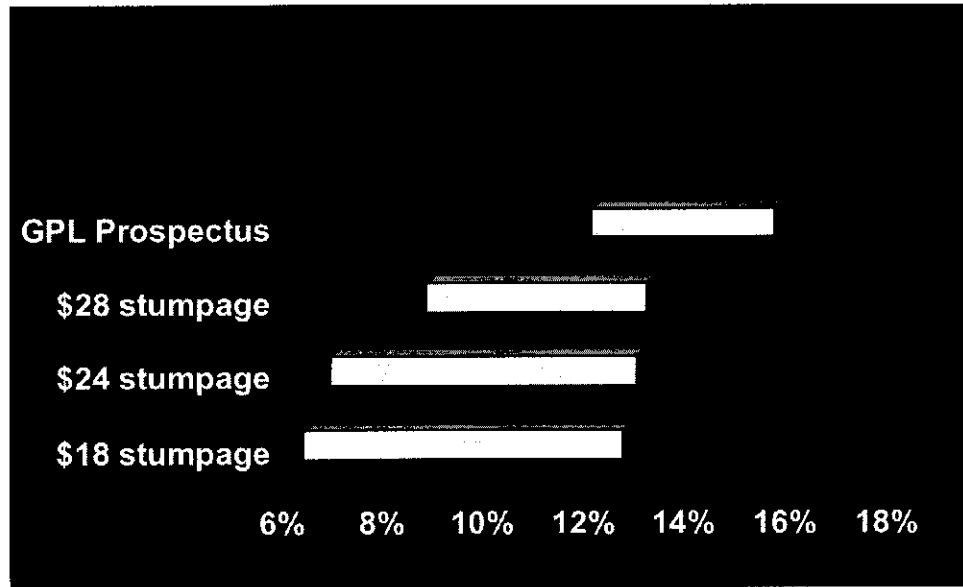
In addition, the low range sensitivity for Option 2 used a veneer price of \$70 based on 20% of the wood being used for veneer.

The resulting Internal Rates of Return (IRR's) were plotted against the GPL Prospectus best estimate returns and the Prospectus sensitivities. The results are shown below.



The ranges that have been modelled are neither deliberately over or understated – they use central RBA inflation targets, recent actual stumpage prices paid for plantation hardwood and a range of stumpage growth rates based on recent published literature. Yet all the scenarios are far below the GPL scenario. The GPL low sensitivity – which uses 2% CPI, stable real growth and \$28.80 stumpage – can hardly be considered low in light of recent experience. In fact, the GPL low sensitivity also looks on the high side.

The Option 2 returns are similar.



8. Implications of the stretched assumptions

While the returns shown in my re-workings may still look high in relation to, say, a fixed interest investment, they are very low when assessed using a risk return model. This is because of the very long term of the investment requiring, in theory, a very high risk premium. Returns in the range shown by my scenarios do not give growers an adequate risk return.

Rating agencies have rated many of the plantation investments as low risk because even the poor scenario projections give good returns. If, however, the low sensitivities are actually high sensitivities, then the investment proves a poor one for investors with low risk tolerance. Those with low risk tolerance may find themselves suffering from an inability to meet their retirement aspirations because of trusting these prospectus assumptions.

The prospectus of course is only meant to show possibilities, not make promises. But only a thorough reading of the Independent Experts' reports gives a glimpse of how high many key wood pricing assumptions appear to be.

Concern over returns to growers has also been raised recently from another perspective. A paper published in the Summer 2003 Australian Forest Grower considered the issue of fairness in determining stumpage returns for growers when considering their risk exposure. The broad theme of the paper was that mechanisms for determining stumpage returns to growers are not transparent and that growers may be inequitably sharing in the risk return. This view appears to be supported from the evidence above regarding recent stumpage prices paid to growers. Additionally, the paper talks about the importance of the "balance of power" between the parties in more equitably sharing profits and risk premiums. This is a cautionary note for growers investing in GPL in particular who will be selling into a monopoly market.

9. Reliances, Limitations and References

This paper has been prepared as a private paper by an interested member of the public. No reliance whatsoever should be placed on it other than to gain a deeper understanding of the issues affecting plantation prospectuses.

The paper has been prepared using publicly available information including the following papers.

Abareconomics (2003) ABARE Australian Commodity Statistics 2002. Table 9 and Table 125.

ANU Forestry Market Reports, Numbers 17 to 23. Prepared by Dr U.N. Bhati and available from <http://sres.edu.au/associated/marketreport/index.html>

Clark, J. (2000) The global wood market, prices and plantation investment: an examination drawing on the Australian experience. In Environmental Conservation 28 and available from <http://cres.anu.edu.au/publications/globalwood.html>

Jenkin, B.M. (2003) The search for transparency in determining the share of residual woodchip stumpage returns to growers. In Australian Forest Grower magazine Vol 25 No 4

Lonsdale Securities Limited. Lonsec Alternative Research – Table of comparison of eight eucalyptus pulpwood projects offered during 2001/2002. Available from <http://ls.sanford.com.au/ipos/ITC ProjectComparisons.pdf>

Reserve Bank of Australia (RBA) discussion note on inflation trends (2002). Available from <http://www.rba.gov.au/PublicationsandResearch/>

PIR Agribusiness Research. Research paper on Gunns Plantations Limited Woodlot Project 2002