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December 24, 1999

General Tariff Review Inquiry
Productivity Commission
PO Box 80
BELCONNEN ACT 2616

Dear Sir/Madam,

We thank you for the opportunity of responding to the Productivity Commission's general review of tariffs. The outcome of this review has the potential of severely impacting on the pulp and paper industry in Australia. To this end, our organisation is taking the review extremely seriously and welcomes any opportunity to expand on this submission through the public hearing stage and by meeting with your relevant officers as required.

NAFPIC is the national body representing employee/staff/community associations that are, based at all domestic mills that manufacture printing and writing papers in Australia. NAFPIC's affiliates are all incorporated associations that are registered under their respective state legislation. The affiliates and the mills concerned are:

Maryvale "A" Team Association Inc ("A" Team), Maryvale mill, Victoria;

Tasmanian Papermill Employees Action Committee Inc (TASPEAC), Burnie and Wesley Vale mills, Tasmania;

Papermill Action Community Team Inc (PACT), Shoalhaven mill, NSW.

All the above mills are owned and operated by Australian Paper Pty Ltd (AP), a member of the Amcor Printing Papers Group and is fully owned by Amcor Limited, which is this country's sole producer of printing and writing papers.

NAFPIC is under no illusion that if tariffs are removed from the like goods (as those manufactured at the above mills), jobs are certainly at risk at all four AP fine paper mills. These mills are all located in regional Australia – Maryvale in Gippsland, Victoria; Burnie and Wesley Vale on the North West Coast of Tasmania; and Shoalhaven in the Illawarra region of NSW.

The Fine Papers Industry in Australia is critically important to regional Australia. It provides significant employment, a substantial income to the local community and provides the state and federal government and its agencies with revenue. In short, the industry provides significant economic benefit to Australia.

Australia's foreign debt for the 1998/99 year was \$239 billion with Australia's trade deficit in forest products standing at over \$2 billion. Almost half of this amount (\$912.4 million¹), goes to pay for imports of printing and writing papers. Australia's production of these papers only supplies around 33% of current demand.

The improvement of Australia's current account is a prime objective of the government. It should be in the national interest to see that imports are replaced by domestic production. Substantial import replacement can occur if the government retains the 5% tariff on paper products that now exists. To remove it is to run counter to their prime objective.

The Australian market demand for printing and writing papers is continuing to grow at 4% per annum. Imports make up about 67% of the present Australian market. These figures indicate that there is opportunity for the Australian industry to increase its market share. A prime objective, and one that is reasonable considering the improved productivity resulting from massive structural reform and international benchmarking by the industry. However, with tariff elimination being considered by the government, confidence in achieving this objective is waning.

Australian Paper (AP) is a significant employer, they manufacture essential products and they have the potential to further replace imports. Indeed, they are an Australian owned and operated company using, in most instances, Australian products/resources. AP has the potential to further enhance these areas without jeopardising ecological sustainability, if, the Australian government is prepared to give Australian manufacturers a "fair go".

A quote from former General Manager, APPM, sums up the view of NAFFPIC in relation to this current review. The quote was made in response to the Government's decision to lower tariffs to 5% - *"To be removing last vestiges of protection from manufacturers when exports are made almost impossible by import restrictions in countries which are flooding the Australian market, makes a mockery of the Canberra bureaucracy's vision of a level playing field."*

The reason for this concern is justifiable when considering the then government's unilateral decision to lower tariffs to 5% at the time when its commitment to the WTO was a binding rate of 12%.

¹ ABARE, 98/99

The industry is currently faced with a world oversupply of paper, which has been intensified by overseas manufacturers increasing their capacity. An oversupply will produce an economic climate that encourages overseas producers to land high volumes of their papers into Australia as cheaply and “competitively” as possible (at times at “dumped” prices).

Economic and Social Significance of the Industry

The economic wellbeing of the three regions, where fine paper mills are located, is dependent on the Australian industry remaining viable.

The Maryvale mill in Gippsland, Victoria produces high quality copy papers and packaging grades. The mill has a replacement value of around \$ billion. In the last four years alone, \$500 million has been invested in expansion and improvement of the processing facilities. \$330 million of this was spent on building a new “state of the art” paper machine, producing high quality A4 copy papers in efforts at import replacement – a benefit to all Australians. Product from Maryvale is estimated to be worth in excess of million p/a. What is absolutely crucial to the region is that \$ million is paid in wages per annum, \$ million on wood and \$ million in buying goods and services. Most of this \$ million is spent locally.

The Burnie and Wesley Vale mills in Tasmania (on the North West Coast) produce base paper for coating and coated papers respectively (Burnie also still produces a quantity of copy paper for export). These mills combined pay out over \$ million per annum in wages and purchase over \$ million in goods and services. This is a significant contribution to the region’s depressed economy. In the last five years, AP has invested around \$140 million in capital improvements to allow it to increase production and in turn increase market share. AP only holds about % of the coated papers domestic market. Given fair trading practices, the company’s ability to increase its domestic market share should be a reasonable objective and should not be hindered by the removal of tariffs.

The Shoalhaven mill is located in the Illawarra region of NSW and produces the highest of quality specialty papers, including water mark papers. This mill pays out over \$ million in wages per annum and purchases around \$ million in goods and services. Again, a significant sum spent in a regional economy.

To lose this in regional economies would wreck havoc or leave the communities in danger of drifting to decay. This is particularly so when the mills are one of the largest private employers for the regions.

The economic impact of AP being forced to close its fine paper mills would be severe, widespread and cannot be ignored. What has been stated above is evidence of this; however, to show a more comprehensive picture we have

looked more closely at the impact it would have on just one of these regions if closure occurred. Tasmania has been chosen as a case study.

If the Burnie and Wesley Vale mills closed the high numbers of people losing employment would have serious impacts on the regional, state and national economies. Firstly, unemployment levels would rise, and the government's commitment in welfare payments would undoubtedly rise, while revenue would be lost from income tax.

Another impact is the decrease in real estate values. This will undoubtedly occur as the region is further economically depressed as a result of the mill closures. Those who have lost their jobs as a result, will experience difficulty meeting mortgage payments and many will leave the region to find employment elsewhere. The impact of mortgage foreclosures and/or forced departures from the region will drive real estate values down to "fire sale" prices.

The other major economic impact is that which would come from AP no longer being a significant purchaser of goods and services in Tasmania (as already stated). The loss of this income would have a substantial effect on Gross State Product.

Government Agencies would also feel the impact of the mills closure. It is understood that in the case of Tasmania, the company spends approximately \$ with Telstra per annum and a further \$ with Australia Post. Tasmanian State revenues would be severely effected with the State having to forgo income of approximately \$ million per annum. The majority of this is made up of payroll tax and electricity payments

Local government would also be badly effected with the region losing around \$ per year in rate revenue.

NAFPIC strongly asserts that this is too high a price to pay.

Rationalisation

In the period since Amcor's acquisition of Australian Pulp and Paper Mills (APPM) interests in 1993, the company has progressively implemented its strategic policy of rationalising fine paper manufacturing in Australia. The company has argued that the relative small size of the Australian market for printing and writing papers demanded that our domestic industry have necessary economies of scale in order to achieve international competitiveness to allow the domestic industry to survive in the long term.

This decision by the company to implement a policy of rationalisation has resulted in a major restructure of domestic manufacturing. This has included, products being assessed and transferred from one mill to another to maximise

international competitiveness; further and significant down sizing of the workforce, including negotiation of new “Enterprise Agreements” with the production and maintenance unions, the development of new product lines and their consequent new investment and major investment in a new \$330 million paper machine at the Maryvale mill for A4 copy paper production. This new paper machine was specifically built as an import replacement facility.

Rationalisation and restructuring is being achieved at a great financial and social cost. In addition to acquisition costs of around \$400 million for the Burnie, Wesley Vale and Shoalhaven mills and the new \$330 million paper machine at Maryvale, the company has also invested around \$310 million in upgrades to plant and machinery, and new product lines at its mills. This represents a total investment of around \$1 billion since 1993.

Australian Paper has invested heavily in the most modern equipment, continually benchmark themselves against the best in the world and employ world’s best practice in all facets of manufacture.

Investment is not at a standstill. We firmly believe that the removal of current industry impediments (which are likely)² and the continuation of tariffs (as they are) will encourage future investment and expansions. Investment would replace current imports of pulp and would allow the current paper machines to run at capacity, increasing market share, replacing imports and creating further employment.

Employees and staff and the regional communities where the mills are situated have also paid a great price for this restructuring through the supreme sacrifice of jobs and the resultant impact on the respective regional economies. They have been subjected to redundancy programs to meet the Company’s rationalisation objectives to achieve international competitiveness. In the three regions, hundreds of employees have lost their jobs through rationalisation.

The aggressive competitiveness and the insidious practice of dumping by the overseas producers, who manufacture the like goods, now attracting the 5% tariff, have aggravated this. The company has had to continue to shed employment outside Enterprise Agreements (in negotiation with the unions) to ensure it retains its market share and the mills remain viable operations. We are confident of “riding these storms”, however, removing tariffs could very well tip the balance resulting in the abandonment of an Australian fine paper industry.

NAFPIC firmly believes that in the absence of any tariff protection, AP would further rationalise its products, causing many job losses and even the possibility of mill closures. This would be devastating to regional Australia.

² These efforts can be expanded on upon request

These fears are well founded and are based upon the employees experience of considerable job losses, which resulted from the previous tariff reduction in 1996 which required massive restructuring of the Australian industry, in its attempts to survive (as referenced above).

EMPLOYMENT

The current total employment level at the three fine paper mills stands at 2,308 People including contract maintenance workers (full time Silcar employees) and forestry contractors³. Current employment numbers at each of the mills are as follows:

| Mill | Production/ Staff | Maintenance/ Contractors | Total |
|--------------|------------------------------|-------------------------------------|--------------|
| Maryvale | 4 | | |
| Burnie | | | |
| Wesley Vale | | | |
| Shoalhaven | | | |
| Total | | | 2308 |

These numbers have dramatically reduced over the years, caused by the closure/down-sizing of other industries, further redundancy programs to meet the company's rationalization objectives to achieve international competitiveness and dumping of A4 copy paper and coated papers.

NAFPIC repeats that to do away with tariffs is to render these job sacrifices as meaningless.

The Productivity Commission is alerted to the unacceptably high levels of unemployment in the three regions:

| Region | Unemployment Rate |
|----------------------------|----------------------------------|
| Gippsland, Victoria | 11.5% (ABS, Aug 99) |
| Mersey-Lyall, Tasmania | 11.2% (ABS, Oct 99) ⁵ |
| Illawarra, New South Wales | 9.7% (ABS, Aug 99) |

The ABS statistics, quoted above, show that each of the regions have an unemployment rate well above the national average of 6.7% (ABS, Oct 99) and well above the average of their respective States:

³ Contractors are specific to Maryvale and include the harvesting and cartage/haulage operators working in the coupes.

⁴ This figure includes the Maryvale mill and Australian Paper Plantations

⁵ This is an original figure. It is not a trend or seasonally adjusted figure

| State | Unemployment Rate |
|-----------------|--------------------|
| Victoria | 6.8% (ABS, Oct 99) |
| Tasmania | 9.3% (ABS, Oct 99) |
| New South Wales | 6.8% (ABS, Aug 99) |

The full impact of job losses, with the consequent loss of other indirect jobs in the regional communities, is an economic and social cost for all Australians and should be considered by the Productivity Commission in the first instance and the government ultimately. The Australian pulp and paper industry is the major employer in the regions where mills are located and its continued operations therefore generate significant indirect employment of considerable economic benefit to those regions.

NAFPIC has recently commissioned a study of regional employment multipliers, from Census employment data for the relevant Statistical Subdivisions for the regions in which the company's mills are located. Professor John Hicks, Dean of the Faculty of Commerce (Charles Sturt University), Professor of Economics and Director of the Regional Economics Research unit undertook this study.

A copy of Professor Hick's study is appended to this submission (see appendix 1). These findings show that the paper making operations generate an employment multiplier in the regions ranging between a conservative 3.6 and 4.2, as follows:

| Region/mill | Employment Multiplier |
|-----------------------------------|-----------------------|
| Latrobe Valley (Maryvale mill) | 3.6 |
| Burnie/Devonport (Burnie W. Vale) | 4.2 |
| Illawarra (Shoalhaven mill) | 4.1 |

Using the respective multipliers, the mills provide the following employment to their respective regions:

| Region | Employment |
|------------------|------------|
| Latrobe Valley | |
| Burnie/Devonport | |
| Illawarra | |

These fine paper mills therefore provide employment for 8,878 Australians. The government has been making every effort to lower Australia's unemployment rate. To remove tariffs on paper products will render these efforts meaningless.

Given the above and the regions' high unemployment rate, the Commission is reminded of the Prime Minister's statement at the signing of the Tasmanian Regional Forest Agreement VIZ.

“When you are trying to achieve a balance and when you’re trying to strike the right balance between strongly competing interests, I ask you always to think of the employment prospects of Australians. Employing Australians is the greatest single social challenge of any government, federal or state in Australia in the 1990’s. And the decisions that we take in every area of political responsibility must have a very high priority in the area of employment.”

The regions’ economies cannot sustain any further loss of employment, particularly unemployment caused through unfair trading decisions made by our own government.

Ecologically Sustainable Development (ESD)

The forest and forest products industry is one of the very few ecologically sustainable industries in Australia. This has been recognised through the previous government’s arduous work on the Ecologically Sustainable Development (ESD) process, through the Resource Assessment Commission’s exhaustive inquiry into Forest and Timber and more recently through the Regional Forest Agreement (RFA) process. In fact there have been more studies into this industry than in any other, approximately 145 to date⁶.

The forest management systems and processes (see appendix 2) and the extensive stringent environmental regulations within the pulp and paper making facilities ensure absolute minimum environmental impact. AP has continually invested in improvements to its environmental processes. An example of the outcome of this work is attached as appendix 3.

We ask that the environmental opportunity costs be considered in any decisions that may impact on the pulp and paper industry’s survival in Australia.

The abandonment of the industry in Australia will directly or indirectly contribute to less ecologically sustainable alternatives, including:

- Increased imports of forest products sourced from unsustainably managed forests overseas contributing unfavourably to global deforestation and Australia’s S2B trade deficit in forest products (see appendix 4, Figure 1)
- Greater reliance on non-renewable building materials that are not biodegradable, uses more energy in manufacture, and has much higher air emissions (see Figure 2)

It needs to be remembered that harvesting of native forests in Australia is saw log driven. Therefore, AP provides a market for the waste product (timber not suitable for saw logs) from this process and supplies local sawmill with a secure

⁶ These processes can be expanded on upon request

and profitable market for their processing waste (sawmill offcuts/chips). They then in turn process this waste (in Australia) into a highly valued added product, fetching \$ 100 a tonne for copy paper.

Customer

AP provides Australia with essential products produced on an ecologically sustainable basis. If AP ceased to exist the quality, price and delivery of paper products in Australia would suffer as imports fill the vacuum in the absence of any domestic competitor. Additionally, as there are no imposts/requirements on overseas producers to take responsibility for the recovery and recycling of their paper products, state and local governments' would be faced with greatly increased costs in meeting agreed to targets for landfill reductions.

Conclusion

NAFPIC is not opposed to tariff liberalisation. However, Australia has already dropped its tariff on paper products significantly below its WTO binding of 12%. We would respectively suggest that in future negotiations (next year) our government does not give a binding commitment below the current applied rate of 5%. NAFPIC has shown that anything below this cannot be sustained. The Australian pulp and paper industry has a lot to offer in providing jobs and job growth and in import replacement opportunities that bring with it huge improvements in Australia's current account deficit.

The Commission is reminded that the significant and social investment to ensure the future of Australia's printing and writing paper industry should not be put at risk. As mentioned above, this investment has come at great cost, both in dollar and human terms, and regional communities in three States have borne the brunt of the necessary industry restructure.

NAFPIC asks those responsible for this review to take into serious consideration the arguments put in this submission and consider the serious impact of tariff removal. It is our firm belief that should the tariffs be removed our industry will struggle to survive.

Yours sincerely,



Peter Spinks (President)

APPENDIX 1

CALCULATING REGIONAL EMPLOYMENT MULTIPLIERS FROM CENSUS EMPLOYMENT DATA

John Hicks
Charles Sturt University

Introduction

A simple method of calculating regional employment multipliers is the basic/non-basic approach. This method recognises that the region is open and therefore stresses the importance of the region's relationship with the outside world.¹

The Basic/Non-Basic Theory

We begin with the assumption that the region's export industries are its "basic" economic foundation. The remaining industries in the region are assumed to exist in order to service the basic industries (and each other). The remaining industries are therefore called "non-basic". Any change in employment in the basic (export) sector will lead to a change in employment in the non-basic (service) sector. Given that the ratio of non-basic to basic employment is stable, expected changes in total employment can be estimated from expected changes in basic employment by the use of the formula:

$$de_r = dBe_r(eM_r).$$

Where d represents the change in the associated variable, e_r is the total employment in the region r , Be_r is the level of basic employment in region r and eM_r is the employment multiplier for the region r .

In calculating eM_r , we make use of the concept of the *location quotient*. The location quotient measures, in terms of employment, the degree to which a given industry, i , is concentrated in a given place. The location quotient (LQ_{ir}) for the i th industry in the r th region is given by the formula:

$$LQ_{ir} = \frac{\frac{e_{ir}}{e_r}}{\frac{E_i}{E}}$$

where e_{ir} is employment in the i th industry in the r th region, E_i is national employment in the i th industry and E is the total national employment.

When LQ_{ir} equals one, then, for that industry, excluding international trade and assuming, (a) patterns of consumption do not vary geographically, (b) labour productivity does not vary geographically and (c) each industry produces a single, perfectly homogeneous good, local demand for the product (or service) can be satisfied by local production. When LQ_{ir} exceeds unity, the industry in the region will be exporting and the amount of export (basic) employment in the industry in the region (Be_{ir}) is given by the formula:

$$Be_{ir} = \left(\frac{e_{ir}}{e_r} - \frac{E_i}{E} \right) \times e_r.$$

¹ See for example, Heilbrun, James (1981), *Urban Economics and Public Policy*, St Martins Press: New York.

If we perform this calculation for every local industry for which the location quotient exceeds unity, and sum the results, we obtain an estimate of total basic employment in the region (TBe_r).

We can now define the region's employment multiplier (eM_r) by the following equation:

$$eM_r = \frac{e_r}{TBe_r}$$

The accuracy of the estimate will depend on the extent to which the underlying assumptions are met. Of the three, (c) is probably the most critical. Where it does not hold, estimates are likely to be biased upwards.

Employment Multiplier Estimate for Latrobe Valley, Burnie-Devonport and Illawara (excluding Wollongong)

Utilising the forgoing methodology in conjunction with ABS employment data² for Australia, La Trobe Valley, Burnie-Devonport and Illawara (excluding Wollongong) statistical subdivisions we estimate the employment multipliers provided in the table below.

The first is based on the unadjusted data supplied by the ABS.

The second takes into account the fact that primary industries are, nationally, important export industries. Here we take the conservative assumption that fifty percent of the national employment in primary industries serves the export market and should therefore not be included in our calculations. This will have the result of increasing the likelihood of a primary industry in a region being a basic industry and raise the level of employment in such industries that is identified as basic employment. Arithmetically this should reduce the value of the estimated employment multiplier. As can be seen, this adjustment has little impact on our results. This is because these industries are not important employers in the regions.

Of greater consequence is allowing for the fact that government (State and Federal) might be over servicing the region (and Australia as a whole) in terms of public administration, health and education. In this context, employment in these sectors may be largely politically determined and not the result of the economic demand for them. We make the very conservative assumption that fifty percent of the employment in these sectors exists because of political, rather than economic, factors. On this basis we adjust the level of basic employment in these sectors to be at least fifty percent of the employment in the sector in the region. Again this will have the result of reducing the size of the employment multiplier. In this case there is a large impact. However, the value of the adjusted employment multiplier, of about 3.5 to 4.1 is still a significant value.

Estimated Employment Multiplier Values

| | La Trobe Valley | Burnie-Devonport | Illawara (Excluding Wollongong) |
|--|------------------------|-------------------------|--|
| Original | 5.4 | 6.3 | 7.4 |
| Adjusted for export industries | 4.9 | 6.3 | 6.4 |
| Adjusted for export industries and government employment | 3.6 | 4.2 | 4.1 |

² ABS (1997), 1996 Census of Population and Housing: Expanded Community Profile, Cat. 2020.0.

In each of the regions examined, the paper industry³ is considered a basic industry and therefore an important component of each region's economic dynamics. Employment in the industry in each region is a significant proportion of both total employment and manufacturing employment and in each region the industry ranks in the top 10 employers for the region. Our analysis suggests that a considerable amount of employment in the region is dependent on the continued health of the paper industry with each job in that industry generating up to about three additional jobs in the region.

Regional Employment in the Paper Industry

| Region | Employment in Paper Industry as % of Total Employment in Region | Employment in Paper Industry as % of Manufacturing Employment in Region | Paper Industry's Rank as an Employer in the Region |
|---------------------------------|---|---|--|
| La Trobe Valley | 4.3 | 40.2 | 6 |
| Burnie-Devonport | 4.0 | 25.5 | 6 |
| Illawara (Excluding Wollongong) | 1.9 | 16.5 | 10 |

The technique for estimating the employment multiplier used in this report has the advantage of being relatively simple and readily adaptable to Census data already collected. Its major weakness lies in the assumptions on which it is based. In particular, the broad categorisation of industries by the ABS will almost certainly mean that assumption (c) will not hold and that, therefore, estimates may be an overestimate.

It may be possible to find evidence which supports the multipliers we have estimated through the application of more sophisticated analysis, including the use of small area input-output tables, the application of general equilibrium models to regional areas, or the use of Keynesian local open economy multipliers.⁴ However, the data for the application of these techniques is not readily available and could be relatively expensive to collect.

Corroboration of our estimates, however, might be provided by anecdotal evidence on the relationship between the industry and its local suppliers.

³ The paper industry is categorised as "wood and paper products" by the ABS.

⁴ As used, for example, in Armstrong, H.W. (1993), "The Local Income and Employment Impact of Lancaster University", *Urban Studies*, pp.1653-1668.

TABLE 1
La Trobe Valley

| | air/er | (air/er)-(E/E) | Ber | PrimAdj | GovAdj |
|-------|-------------|----------------|-------------|-------------|-------------|
| 4 | 0.000153698 | | | | 2 |
| 828 | 0.031815562 | | | 414 | 414 |
| 37 | 0.00142171 | | | 18.5 | 18.5 |
| 141 | 0.005417867 | 0.003994145 | 103.9476191 | 103.9476191 | 103.9476191 |
| 12 | 0.000461095 | | | 6 | 6 |
| 12 | 0.000461095 | | | 6 | 6 |
| 179 | 0.006878002 | 0.003670828 | 95.53330944 | 95.53330944 | 95.53330944 |
| 18 | 0.000691643 | 0.000257926 | 8.712519736 | 9 | 9 |
| 3 | 0.000115274 | | | 1.5 | 1.5 |
| 32 | 0.001229587 | | | 16 | 16 |
| 33 | 0.001268012 | | | | |
| 60 | 0.002305476 | | | | |
| 222 | 0.008530259 | | | | |
| 257 | 0.00987512 | | | | |
| 1106 | 0.042497598 | 0.034619326 | 900.9679649 | 900.9679649 | 900.9679649 |
| 149 | 0.005725264 | | | | |
| 158 | 0.006071085 | | | | |
| 104 | 0.003996158 | | | | |
| 392 | 0.01506244 | | | | |
| 173 | 0.006647454 | | | | |
| 134 | 0.005148895 | | | | |
| 0 | 0 | | | | |
| 1982 | 0.076157541 | 0.070913391 | 1845.521004 | 1845.521004 | 1845.521004 |
| 106 | 0.004073007 | 0.001649981 | 42.94074658 | 42.94074658 | 42.94074658 |
| 143 | 0.005494717 | 0.001406621 | 36.60731918 | 36.60731918 | 36.60731918 |
| 550 | 0.021133525 | 0.001767781 | 46.0065085 | 46.0065085 | 46.0065085 |
| 1343 | 0.051604227 | 0.011665743 | 303.6009682 | 303.6009682 | 303.6009682 |
| 18 | 0.000691643 | | | | |
| 352 | 0.013525456 | | | | |
| 404 | 0.015523535 | | | | |
| 208 | 0.007992315 | | | | |
| 85 | 0.00326609 | | | | |
| 1590 | 0.061095101 | 0.012002338 | 312.360839 | 312.360839 | 312.360839 |
| 1548 | 0.059481268 | 0.003726394 | 96.97941665 | 96.97941665 | 96.97941665 |
| 933 | 0.035850144 | 0.008458936 | 220.1438189 | 220.1438189 | 220.1438189 |
| 947 | 0.036388088 | | | | |
| 49 | 0.001882805 | | | | |
| 421 | 0.016176753 | | | | |
| 47 | 0.001805956 | | | | |
| 4 | 0.000153698 | | | | |
| 8 | 0.000307397 | | | | |
| 0 | 0 | | | | |
| 48 | 0.00184438 | | | | |
| 10 | 0.000384246 | | | | |
| 420 | 0.016138329 | | | | |
| 0 | 0 | | | | |
| 487 | 0.018712776 | | | | |
| 588 | 0.02259366 | 0.014930544 | 388.5674003 | 388.5674003 | 388.5674003 |
| 62 | 0.002382325 | | | | |
| 0 | 0 | | | | |
| 253 | 0.009721422 | | | | |
| 1920 | 0.073775216 | | | | |
| 8 | 0.000307397 | | | | 4 |
| 935 | 0.035926993 | | | | 467.5 |
| 22 | 0.000845341 | | | | 11 |
| 2240 | 0.086071085 | 0.015348136 | 399.4352495 | 399.4352495 | 1120 |
| 32 | 0.001229587 | 0.000417939 | 10.87687117 | 10.87687117 | 16 |
| 1582 | 0.060787704 | | | | 791 |
| 616 | 0.023669549 | 0.001047131 | 27.25157291 | 27.25157291 | 27.25157291 |
| 7 | 0.000268972 | 2.09469E-05 | 0.545142627 | 0.545142627 | 0.545142627 |
| 82 | 0.003150817 | | | | |
| 60 | 0.002305476 | | | | |
| 251 | 0.009644573 | | | | |
| 0 | 0 | | | | |
| 433 | 0.016637848 | | | | |
| 388 | 0.014908742 | | | | |
| 4 | 0.000153698 | | | | |
| 375 | 0.014409222 | 0.000902452 | 23.48632568 | 23.48632568 | 23.48632568 |
| 410 | 0.015754083 | | | | |
| 26025 | | | 4861.484597 | 5327.772077 | 7326.959956 |
| | | | 5.353302985 | 4.884781035 | 3.551950626 |

TABLE 2
Burnie-Devonport

| | eir/er | (eir/er)-(Ei/E) | Ber | PrimAdj | GovAdj |
|-------|-------------|-----------------|-------------|-------------|-------------|
| 17 | 0.000613077 | 0.000165479 | 4.588559095 | | 8.5 |
| 884 | 0.031879981 | | | | 0 |
| 131 | 0.004724296 | 0.002323139 | 64.41832053 | | |
| 248 | 0.008943705 | 0.007519983 | 208.5215958 | 208.5215958 | 208.5215958 |
| 34 | 0.001226153 | | | 17 | 17 |
| 65 | 0.002344116 | 0.001440671 | 39.9483526 | 39.9483526 | 39.9483526 |
| 0 | 0 | | | 0 | 0 |
| 3 | 0.00010819 | | | 1.5 | 1.5 |
| 116 | 0.004183346 | 0.000659397 | 18.28441347 | 58 | 58 |
| 33 | 0.00119009 | | | | |
| 50 | 0.001803166 | | | | 0 |
| 31 | 0.001117963 | | | | 0 |
| 1119 | 0.040354863 | 0.018488307 | 512.662258 | 512.662258 | 512.662258 |
| 450 | 0.016228497 | 0.005438089 | 150.792768 | 150.792768 | 150.792768 |
| 1099 | 0.039633597 | 0.031755324 | 880.543389 | 880.543389 | 880.543389 |
| 245 | 0.008835515 | | | | 0 |
| 184 | 0.006635652 | | | | 0 |
| 175 | 0.006311082 | 0.001243065 | 34.46893667 | 34.46893667 | 34.46893667 |
| 370 | 0.013343431 | | | | 0 |
| 531 | 0.019149627 | | | | 0 |
| 114 | 0.004111219 | | | | 0 |
| 0 | 0 | | | | 0 |
| 139 | 0.005012802 | | | | 0 |
| 39 | 0.00140647 | | | | 0 |
| 93 | 0.003353889 | | | | 0 |
| 654 | 0.023585416 | 0.004219672 | 117.0072805 | 117.0072805 | 117.0072805 |
| 985 | 0.035522377 | | | | 0 |
| 20 | 0.000721267 | | | | 0 |
| 479 | 0.017274334 | 0.00267201 | 74.09217307 | 74.09217307 | 74.09217307 |
| 520 | 0.01875293 | | | | 0 |
| 450 | 0.016228497 | | | | 0 |
| 87 | 0.003137509 | | | | 0 |
| 1594 | 0.057484944 | 0.00839218 | 232.7067706 | 232.7067706 | 232.7067706 |
| 1804 | 0.065058242 | 0.009303369 | 257.9731122 | 257.9731122 | 257.9731122 |
| 963 | 0.034728984 | 0.007337776 | 203.4692009 | 203.4692009 | 203.4692009 |
| 1092 | 0.039381153 | | | | 0 |
| 63 | 0.00227199 | 0.000111263 | 3.085203355 | 3.085203355 | 3.085203355 |
| 656 | 0.023657543 | 0.005412626 | 150.0867195 | 150.0867195 | 150.0867195 |
| 103 | 0.003714523 | | | | 0 |
| 125 | 0.004507916 | 0.003312968 | 91.86530186 | 91.86530186 | 91.86530186 |
| 26 | 0.000937647 | | | | 0 |
| 57 | 0.00205561 | 0.001868216 | 51.80375309 | 51.80375309 | 51.80375309 |
| 397 | 0.014317141 | 0.00499917 | 138.6219785 | 138.6219785 | 138.6219785 |
| 28 | 0.001009773 | | | | 0 |
| 292 | 0.010530492 | | | | 0 |
| 0 | 0 | | | | 0 |
| 443 | 0.015976054 | | | | 0 |
| 86 | 0.003101446 | | | | 0 |
| 115 | 0.004147283 | | | | 0 |
| 0 | 0 | | | | 0 |
| 414 | 0.014930217 | 0.001125006 | 31.19528624 | 31.19528624 | 31.19528624 |
| 1272 | 0.045872552 | | | | 0 |
| 3 | 0.00010819 | | | | 1.5 |
| 972 | 0.035053554 | | | | 486 |
| 14 | 0.000504887 | | | | 7 |
| 2159 | 0.077860723 | 0.007137774 | 197.9233442 | 197.9233442 | 1079.5 |
| 31 | 0.001117963 | 0.000306316 | 8.49382366 | 8.49382366 | 15.5 |
| 2234 | 0.080565473 | 0.009035198 | 250.5369975 | 250.5369975 | 1117 |
| 811 | 0.029247358 | 0.00662494 | 183.7029727 | 183.7029727 | 183.7029727 |
| 3 | 0.00010819 | | | | 0 |
| 57 | 0.00205561 | | | | 0 |
| 86 | 0.003101446 | | | | 0 |
| 182 | 0.006563526 | | | | 0 |
| 0 | 0 | | | | 0 |
| 526 | 0.01896931 | 0.001324028 | 36.7139834 | 36.7139834 | 36.7139834 |
| 418 | 0.015074471 | | | | 0 |
| 8 | 0.000288507 | | | | 0 |
| 289 | 0.010422302 | | | | 0 |
| 1041 | 0.037541924 | 0.017671224 | 490.0053741 | 490.0053741 | 490.0053741 |
| 27729 | | | 4433.511868 | 4431.220575 | 6680.76641 |
| | | | 6.254409782 | 6.254409782 | 4.150571701 |

TABLE 3

Illawarra (excluding Wollongong)

| eir | eir/er | (eir/er)-(E/E) | Ber | PrimAdj | GovAdj |
|-------|-------------|----------------|-------------|-------------|-------------|
| 14 | 0.000356524 | | | | 7 |
| 1394 | 0.035499643 | | | | 697 |
| 91 | 0.002317409 | | | | 45.5 |
| 80 | 0.002037282 | 0.00061356 | 24.09510132 | | 40 |
| 199 | 0.00506774 | 0.003606303 | 141.6231063 | 141.6231063 | 141.6231063 |
| 18 | 0.000458389 | | | | 9 |
| 114 | 0.002903127 | | | | 57 |
| 3 | 7.63981E-05 | | | | 1.5 |
| 6 | 0.000152796 | | | | 3 |
| 87 | 0.002215544 | 0.000956037 | 37.54453302 | | 43.5 |
| 20 | 0.000509321 | | | | 0 |
| 139 | 0.003539778 | | | | 0 |
| 555 | 0.014133646 | | | | 0 |
| 122 | 0.003106855 | | | | 0 |
| 732 | 0.018641133 | 0.01076286 | 422.6682942 | 422.6682942 | 422.6682942 |
| 394 | 0.010033615 | | | | 0 |
| 279 | 0.007105022 | | | | 0 |
| 497 | 0.012656616 | 0.007588598 | 298.011846 | 298.011846 | 298.011846 |
| 495 | 0.012605684 | | | | 0 |
| 930 | 0.023683406 | | | | 0 |
| 303 | 0.007716207 | | | | 0 |
| 0 | 0 | | | | 0 |
| 262 | 0.006672099 | 0.00142795 | 56.07701339 | 56.07701339 | 56.07701339 |
| 158 | 0.004023632 | 0.001600606 | 62.85741418 | 62.85741418 | 62.85741418 |
| 251 | 0.006391973 | 0.002303878 | 90.47558443 | 90.47558443 | 90.47558443 |
| 950 | 0.024192727 | 0.004826983 | 189.5604397 | 189.5604397 | 189.5604397 |
| 2150 | 0.054751961 | 0.014813477 | 581.7400723 | 581.7400723 | 581.7400723 |
| 51 | 0.001298767 | | | | |
| 659 | 0.016782113 | 0.002179789 | 85.60250216 | 85.60250216 | 85.60250216 |
| 529 | 0.013471529 | | | | |
| 531 | 0.013522461 | | | | |
| 188 | 0.004787613 | 0.00127414 | 50.03676788 | 50.03676788 | 50.03676788 |
| 2274 | 0.057909748 | 0.008816985 | 346.2518276 | 346.2518276 | 346.2518276 |
| 2471 | 0.062926556 | 0.007171682 | 281.6391417 | 281.6391417 | 281.6391417 |
| 1284 | 0.03269838 | 0.005307173 | 208.4179765 | 208.4179765 | 208.4179765 |
| 2835 | 0.07219619 | 0.02567024 | 1008.095985 | 1008.095985 | 1008.095985 |
| 48 | 0.001222369 | | | | |
| 715 | 0.01820821 | | | | |
| 189 | 0.004813079 | 0.000453125 | 17.79468349 | 17.79468349 | 17.79468349 |
| 25 | 0.000636651 | | | | |
| 153 | 0.003896302 | | | | |
| 0 | 0 | | | | |
| 159 | 0.004049099 | | | | |
| 53 | 0.0013497 | | | | |
| 568 | 0.014464704 | | | | |
| 3 | 7.63981E-05 | 3.64574E-05 | 1.431717585 | 1.431717585 | 1.431717585 |
| 606 | 0.015432413 | | | | |
| 106 | 0.002699399 | | | | |
| 132 | 0.003361516 | | | | |
| 3 | 7.63981E-05 | 5.04694E-05 | 1.981982314 | 1.981982314 | 1.981982314 |
| 641 | 0.016323724 | 0.002518513 | 98.90450458 | 98.90450458 | 98.90450458 |
| 2222 | 0.056585515 | | | | |
| 11 | 0.000280126 | | | | 5.5 |
| 1288 | 0.032800244 | | | | 644 |
| 1214 | 0.030915758 | 0.021318595 | 837.2025497 | 837.2025497 | 837.2025497 |
| 2985 | 0.076016095 | 0.005293145 | 207.8671139 | 207.8671139 | 1492.5 |
| 65 | 0.001655292 | 0.000843644 | 33.13075292 | 33.13075292 | 33.13075292 |
| 2770 | 0.070540898 | | | | 1385 |
| 975 | 0.024829378 | 0.00220696 | 86.66951291 | 86.66951291 | 86.66951291 |
| 9 | 0.000229194 | | | | |
| 122 | 0.003106855 | | | | |
| 249 | 0.006341041 | | | | |
| 308 | 0.007843537 | | | | |
| 0 | 0 | | | | |
| 812 | 0.020678415 | 0.003033133 | 119.1141771 | 119.1141771 | 119.1141771 |
| 558 | 0.014210044 | | | | |
| 34 | 0.000865845 | 0.000453212 | 17.79807268 | 17.79807268 | 17.79807268 |
| 478 | 0.012172762 | | | | |
| 702 | 0.017877152 | | | | |
| 39268 | | | 5306.592673 | 6148.453039 | 9467.585925 |
| | | | 7.399851923 | 6.386647137 | 4.147625415 |

APPENDIX 2

Table 17.2: Forest Management Systems and Processes in Victoria

| | |
|--|---|
| <p>1. LEGISLATION AND POLICIES International Treaties, Conventions and Initiatives Commonwealth Government Legislation National Policies State Legislation State Policies 2. PLANNING <i>Strategic Planning</i> Regional Forest Agreements Land Use Planning - Public land <i>Forest Management Planning - Public Land</i> Forest Management Plans (State Forest) Victorian Code of Forest Practices Regional Prescriptions Sustainable Yield Wood Utilisation Plans Forest Coupe Plans Log Grading <i>Park Planning</i> Park Plans <i>Private Land</i> Land Use Plans Education and Cooperative Programs Native Vegetation Retention Controls Code of Forest Practices for Private Land Waters of Victoria State Environment Protection Policy Flora and Fauna Guarantee Plantation Management Private Forestry Strategy <i>Fire Management Planning</i> Code of Practice for Fire Management Regional Fire Protection Plans <i>Flora and Fauna Planning</i> Flora and Fauna Guarantee Recovery Plans</p> | <p>2. PLANNING (continued) <i>Cultural Values</i> Aboriginal Places Historic Places <i>Exploration and Mining</i> Environmental Effects Statements Planning Permits Work Plans Environmental Review Committees <i>Other Plans</i> 3. IMPLEMENTATION <i>Accountabilities and Responsibilities</i> <i>Resourcing of Implementation Programs</i> <i>Operational Controls over Implementation Programs</i> Control of Timber Harvesting in State Forests Control of Fire Management Operations Control of Other Activities in State Forest Control of Operations in National Parks Control of Other Operations on Public Land Control of Activities on Private Land <i>Documentation and Records Keeping</i> <i>Communication and Education</i> <i>Knowledge, Skills And Training</i> 4. INFORMATION MONITORING AND EVALUATION <i>Forest Information</i> <i>Monitoring Implementation of Plans and Programs</i> <i>Monitoring and Evaluating Condition of the Forest Environment</i> <i>Auditing of Compliance with Regulations and Controls</i> <i>Corrective Action</i> 5. REVIEW AND IMPROVEMENT Review of the Environmental Management System Research and Development</p> |
|--|---|

Resources and Environment (NRE) to the completion of specific management actions to enhance the conservation and production roles of State forest.

The process for auditing components of the management system and corrective actions to determine system performance was also assessed. Assessment of audit processes was based

APPENDIX 3

(This fact sheet is currently being updated)

An Australian Mill — among world's best

The Maryvale pulp and paper mill is among the world's best. It is the only mill in Australia equipped with state of the art technology to produce kraft pulp which produces paper with outstanding quality characteristics.

The mill's technology provides many advantages:

The kraft process creates pulp with a higher strength than any other pulping process.

Maryvale mill is a conservation friendly mill and uses one of the lowest net energy consuming pulping process. Over 95% of the non fibre components of the wood (lignin) is concentrated and burnt in recovery boilers. The energy released generates sufficient heat to raise steam and electricity in a co-generation pass-out turbine to meet the pulp



mill requirements (or more than 40% of the total site's needs).

Over 98% of the pulping chemicals are fully recovered and recycled through a liming process and converted back into their original state. This substantially reduces waste and reduces the need for new chemicals to be used.

A very effective waste water treatment system has resulted in Australian Paper's Maryvale mill meeting one of the most stringent discharge licences for any bleach eucalypt kraft mill in the world.

Australian Paper's Maryvale mill is the largest pulp and

paper mill in Australia, with an annual production of 410,000 tonnes of pulp and 420,000 tonnes of paper and paper board. Including Amcor Plantations, more than 1,000 people from the local community are employed at Maryvale and, indirectly, another 2,500 in support industries. The mill pays approximately \$65 million in salaries and wages each year, most of which is spent in the Latrobe Valley, to make a major contribution to the region's economy.

In 1995, Australian Paper invested \$72 million to upgrade Maryvale mill's No. 4 paper machine to state of the art technology and built a world-class waste paper treatment plant. This investment improved the appearance and printability of its linerboard products used to make cardboard boxes,

P.T.O.

and enabled the mill to use more recycled paper. The machine is capable of consuming 50,000 tonnes of waste paper per annum.

Australian Paper has started construction of its No. 5 paper machine, an investment of \$330 million dollars. This project will create some 200 jobs in construction and 50 permanent jobs when it is commissioned in late 1997. This investment will make a significant contribution to the Latrobe Valley economy. It will also provide a significant boost to the Australian economy as the machine's output of 160,000 tonnes per annum of photocopy paper will free-up the company's other mills to make products for import replacement. This will go along way in helping to reduce our trade deficit for paper products.

The papers and paperboards made at Marvate mill are used to make corrugated boxes, bags, multi-wall sacks, wrapping papers, offset printing papers, continuous paper, stationery and photocopying paper.

For further information contact A-Team Co-ordinator, C/- PO Box 37, Morwell 3840

The A-Team are Forestry and Forest Products Industry employees working to increase jobs and the environment

APPENDIX 4

Sustainably Harvested Forests & Ecologically Sustainable Development

- Employment
- Regional Development
- Improved “living”

Ecologically Sustainable Development

- Offset global deforestation
- Arrest land degradation
- Improve water quality
- Environmentally friendly products

- Investment
- Value-adding
- Import replacement
- Contribution to Infrastructure

Environmental Characteristics of Selected Building Materials

| <i>Material</i> | <i>Renewable</i> | <i>Recyclable (%)</i> | <i>Biodegradable</i> | <i>Process Energy (kwh/tonne)</i> | <i>Air Emissions (kg/tonne)</i> | <i>Other Wastes (e.g.)</i> | <i>Extraction Impacts</i> |
|-----------------|------------------|-----------------------|----------------------|--|---------------------------------|----------------------------------|---------------------------|
| Timber | Yes | Low | Yes | 1,600 | ca. 0 | Formaldehyde | Road & Harv. |
| Steel | No | 50% | No | 7,400 | 12 | Phenols Cyanides Fluorides | Mining |
| Concrete | No | No/Low | No | 2,100 | | | Mining |
| Plastics | No | 50% | No | 28,000 | 45 | Cyanides Phosgene Toluene | Drilling (Spills) |
| Aluminium | No | 33% | No | 27,000 (from scrap) 91,000 (from ore) | | Fluorides Arsenic | Mining |

Source: RAC Draft Report Volume 1, p. 298