

# AUSTRALIAN FOREST PRODUCTS INDUSTRY



Department of  
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AUSTRALIA



INVEST AUSTRALIA

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# AUSTRALIAN FOREST PRODUCTS INDUSTRY

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Unless otherwise indicated, the currency used is Australian dollars.

## 1.1 EXECUTIVE SUMMARY

The Australian forestry sector is entering a period of growth and expansion that is a result of the increasingly available resources and new investment in the industry. There has been more than \$7 billion dollars invested in the forestry sector since 1997, including \$1.5 billion invested in plantations. This report highlights strengths for potential investment in the Australian forestry/forest products sector.

### Forestry Industry Specific Strengths

- World Leaders in Sustainable Forest Management:** With decades of experience in competitive management of our hardwood and softwood resource, Australia offers powerful advantages for the global forestry industry. The Australian Government recognises the need to clearly define areas for harvesting and long term sustainable resources. To achieve this, the Government has developed a national approach to forest management, encompassing the National Forest Policy Statement, Regional Forestry Agreements, Plantations for Australia: The 2020 Vision, and the Forest and Wood Action Agenda.
- Expanding Resources and Processes:** Government policies and structural reforms, including financial and taxation systems, have led to a more competitive business environment, which has resulted in significant increased investment in plantations and processing facilities. Within the past seven years: the plantation forest estate has increased by 50% to a total of 1.5 Mha: 979,633 ha of softwood and 587,399 ha of hardwood. In coming years harvests from plantations will continue to increase, with forecasts from ABARE suggesting a 20% increase in plantation softwood fibre and a ten-fold increase in fibre sourced from plantation hardwoods by 2009. A total of \$7 billion has been invested in the forest and wood products industry over the past five years: \$3.5-4 billion in mergers, take-overs and acquisitions; \$2 billion in new processing capacity; and \$1.5-2 billion in plantation establishment.
- Internationally Cost Competitive** (when benchmarked against other countries in the Asia-Pacific region): We are particularly strong in terms of low cost power as well as hardwood and softwood fibre costs. Australia is strongly cost competitive in the production of softwood glue laminated lumber and hardwood pulpwood (Jaakko Poyry). Our resources also include diversified processing facilities and specialised high value kiln drying processing capacity.
- Skills:** Australia has a highly skilled workforce with 2,500 professionally trained foresters, 14,000 growers and harvesters, and about 72,000 people employed in processing.
- Well-located Infrastructure** (with most resources within 100 kilometres of processing facilities and easy access to major ports): Australia has restructured its shipping and transport industry, resulting in an internationally competitive service. Ship charges have fallen by an average of 23% for Australia's five major ports while port loading and unloading rates are in line with those overseas. Within the Asia-Pacific region, most of the demand for wood and paper products is from Japan, China, Taiwan, Korea and Indonesia. Jaakko Poyry's benchmarking of Landed Costs for Japanese Imported Hardwood Woodchips rates Australia as the most competitive source.
- Certification** (Australian Forestry Standard [AFS]): Australia has developed the AFS as a certification system for recognising environmental, economic, social and cultural forest management performance and sustainability in the forest industry. It is based on the ISO 14001: 1996 and the Montreal Process, and is compatible with other international certification schemes.

For further information on the legal, taxation and government policy aspects of investing in Australia, refer to Blake Dawson Waldron's Australia – An Introduction for Investors on the Invest Australia web site [www.investaustralia.gov.au](http://www.investaustralia.gov.au).

### Australia Generic Strengths

#### 1. Strong Economic Credentials

- Australia's strong growth rates (average annual real GDP growth of 3.2% since 1990) have exceeded almost all other OECD countries, including the US, Canada, UK, Germany and Japan. The OECD's forecast growth for Australia in 2003 is 3.7%, compared with an OECD average of 2.2%.
- The Australian economy is ranked as the most resilient in the world, having withstood the 1997 Asian financial crisis and the 2001 global downturn (*World Competitiveness Yearbook [WCY] 2002*).
- Productivity growth in Australia has exceeded 2% annually over the past decade, outstripping growth in the US and the OECD (*Australian Bureau of Statistics [ABS]*).

## 2. Democratic and Politically Stable Location

- The Australian political environment is ranked as one of the most stable in the world, third behind Finland and Luxembourg (*WCY 2002*).
- An Executive Opinion Survey concludes Australia's government institutions are transparent and reliable. On the transparency of Government policy, Australia ranks fifth in the world behind Finland, Denmark, Switzerland and Singapore (*WCY 2002*).
- Corruption levels are low – Australia is ranked seventh lowest in the world, and is more competitive than the US, UK, Canada and most regional competitors (*WCY 2002*).

## 3. Highly Skilled and Multicultural Workforce

- Australia's higher education enrolment rate, at around 80%, is the third highest in the world behind Canada and the US (*Global Competitiveness Report 2001-02*).
- Education is Australia's fastest growing export service sector, reflecting its reputation for quality and innovation. Nearly 20% of tertiary students are international students (*Department of Education, Science and Training, 2002*).
- Australia is a multicultural society, with citizens from over 140 countries. Of Australia's population of 19 million, 2.6 million speak a language other than English at home (*ABS, 2001*).
- Australia ranks in the world's top 10 countries in availability of IT skills, ahead of Singapore, UK, Germany and Japan (*WCY 2002*).

## 4. Cost Competitive Location

- The cost of CEO and employee remuneration in Australia is significantly lower than the US, Japan, UK, Hong Kong, Germany and Singapore (*WCY 2002*).
- Australia's telecommunication costs are very competitive. For example, international call costs in China and Japan are more than five and three times expensive respectively (*WCY 2002*).
- Australia is one of the lowest cost locations for office space. For example, Tokyo and London office space costs are more than triple that of Sydney (*Global Market Rents July 2002, CB Richard Ellis*).
- Australia's overall tax burden of 31.5% (tax revenues as share of GDP) is significantly lower

than the OECD average of 37.4%. Taxation reform has resulted in a competitive corporate tax rate of 30%.

## 5. Sophisticated Telecommunications and Information Technology Systems

- Australia's telecommunications infrastructure is ranked the best in the world for service, pricing choice and regulation (*Asia Pacific Telecommunications Index data, Axiss Australia 2002*).
- Australia is ranked second in the world behind the US for the number of secure servers, e-business readiness and e-government services. Australia is ranked second behind Korea on the percentage of households that own or lease a PC, and third on the price of Internet use at peak times (*National Office of Information Economy, 2002*).
- Australia's expenditure on information and communications technology [ICT] as a percentage of GDP is 10.7%, and is ranked fourth in the world (*Digital Planet 2002*).

## 6. Innovative Culture with Excellent R&D Infrastructure

- Australia's \$3 billion innovation strategy, *Backing Australia's Ability*, demonstrates a strong commitment to fostering world-class innovation, and research and development. The strategy includes a 175% premium tax concession for additional R&D, and the establishment of ICT and Biotechnology Centres of Excellence.
- R&D expenditure by government agencies in Australia, as a percentage of GDP, is the third highest in the OECD behind France and Finland (ABS). Thirty eight per cent of foreign-owned manufacturers in Australia undertake R&D, compared with an OECD average of 18%.
- Australia's per capita research numbers are very high, exceeded only by Finland (*OECD STI Scoreboard 2001*).
- Australia's research organisations are world class. CSIRO is ranked third in the world in environmental research (Science Watch) and Australia is ranked ninth for the quality of its research institutions (*Global Competitiveness Report 2001-02*).

## 7. Open and Efficient Regulatory Environment

- Australia is recognised as having one of the most effective and modern intellectual property rights regimes in the world, strongly influenced and consistent with World Intellectual Property Organisation conventions.

- Australia is ranked tenth in the world in patent and copyright protection, higher than Singapore, UK, Japan, and Hong Kong (*WCY 2002*).
- Our legal systems provide certainty and security, while our immigration system covers all business needs. Invest Australia's immigration program provides access to permanent and long stay visas, and fast tracking of visas for expatriate personnel.

## 8. Strategic Time Zone Advantages

- Australia has unparalleled time zone and Asian location advantages. Firms can 'follow the sun' from the US and Europe, and operate 24 hours a day.
- With the same time zone as much of Asia, Australia is also a great place for firms to base their Asian operations. Australia's top five export destinations include Japan, Korea and China (*ABS*).

## 9. Excellent Quality of Life

- Corporate professionals around the globe have voted Australia as one of the best places to live and work, ahead of the US, Singapore, Canada, Norway, Sweden, the Netherlands and Hong Kong (*WCY s2002*).
- The availability of affordable, quality housing and the standards of educational services, health care and recreational facilities all contribute to our world-class quality of life.

## 10. Welcoming Attitude to Foreign Investment

- The Australian Government encourages foreign investment. Nearly 99% of all proposals are approved.
- Invest Australia is the national investment promotion agency, providing a range of services to assist investors. With 14 offices around the world, its mission is to attract productive foreign direct investment into Australia.

## 1.2 INTRODUCTION

Australia has all the ingredients to justify new investment in its expanding plantation resource base, as well as the opportunity to supply the domestic market in the form of import replacement and exports to close Asian markets. While Australia has considerable amounts of raw material, there is still an overall deficit in the trade of forest products of \$1.688 billion in 2001-02.

There are many forestry industry strengths as well as the more generic 'Why Australia' strengths to attract

foreign investors to Australia. However, one of the most telling strengths is that over the past decade, in terms of growth, Australia has outperformed its neighbours (and natural markets). Australia's production of wood fibre increased by 3.5% from 1990 to 2000. Over the same period, Asia's production decreased by 1.2%. Similar trends were also experienced in the production of sawlog, sawnwood and pulpwood. Production of sawlog in Australia increased by 2% from 1990 to 2000. However, Asia experienced a decrease of 1.6% over the same period. Australia's sawnwood production increased by 2.9% while Asia had no growth, staying at the same level. Australia's production of pulpwood increased by 4.1% from 1990 to 2000. Over the same period, Asia experienced a 2.7% decrease in production. (*Refer to Tables 2.4, 2.5, 2.6 URS, Australian Forest and Wood Products Review 2002*)

In relation to environmental approvals, transparent assessment processes have been legislated by the Commonwealth's *Environmental Protection and Biodiversity Conservation Act 1999*. The Act has transparent environmental impact assessment and approval processes, with fixed tight timelines for each key decision. Most of the States and Territory's also have transparent assessment processes. Arrangements are also in place to ensure that, for Commonwealth and State/Territory assessment legislation, the two processes can be married in some way to avoid any duplication by the proponent.

In terms of its competitiveness to attract a potential investment in a hardwood Kraft pulp mill, Australia compares well with its competitors (Brazil, Chile and Indonesia). Within various international ranking systems, Australia out shines its competitors.

- The London-based *Euromoney* magazine ranks a country's risk, taking into account economic performance, political risk, debt indicators, credit ratings and access to capital markets. In 2002 Australia was placed seventeenth out of 178 countries. Brazil was not ranked. However, Chile was ranked 39 and Indonesia 107.
- The Institute for Management Development in Lausanne (Switzerland) publishes annual competitiveness rankings for countries, taking into account domestic economy, internationalisation, government, management, finance, infrastructure, science and technology. In 2002, Australia ranked fourteenth of 49 countries, Brazil 35, Chile 20, and Indonesia 47.
- The German-based Transparency International Annual Country Corruption Index provides an overview of the state of corruption around the globe. In 2001, Australia ranked eleventh lowest out of 91 countries, Brazil 46, Chile 18 and Indonesia 88.

## 1.3 RESOURCES

Australia has an abundance of natural resources in the forestry area. Resources are derived from native forests and plantations. The Eucalypt species, unique to Australia, makes up about 80% of Australia's forests with the remainder consisting of a variety of acacia species, cypress pine (*Callitris spp.*) and paper-bark (*Melaleuca spp.*).

Overall, Australia has about 164 million hectares of native forests. Most of the commercial quality forest is publicly owned (29.4 million ha of native forest and 632,000 ha of plantations).<sup>i</sup> In addition, Australia has more than 900,000 ha of private plantations (about 400,000 ha of softwood and nearly 500,000 ha eucalyptus). Plantations provide about 57% of Australia's

wood processing requirements.<sup>ii</sup> In 2000-01, total harvest removals were around 24.3 million m<sup>3</sup> - 10.3 million m<sup>3</sup> from native forests (mainly hardwood), 12.9 million m<sup>3</sup> of mostly exotic plantation softwoods and more than 1.1 million m<sup>3</sup> of plantation hardwoods.<sup>iii</sup>

The size of Australia's plantations is expected to rapidly increase over the next decade. Forecasts from ABARE suggest softwood availability from plantations will increase from 12.9 million m<sup>3</sup> to 15 million m<sup>3</sup> pa by 2005-09. Many of the hardwood plantations are relatively young. By 2005-09, hardwood availability is expected to increase 10-fold from about 1.1 million m<sup>3</sup> pa to about 9 million m<sup>3</sup> pa.

**FIGURE 1 - FOREST RESOURCE REGIONS IN AUSTRALIA**



**TABLE 1.0 - FORECAST AUSTRALIAN PLANTATION LOG SUPPLY (1000m<sup>3</sup>)**

PRODUCT	2001-04	2005-09	2010-14	2015-19	2020-24	2025-29	2030-34	2035-39	2040-44
Softwood sawlogs	9	9.2	9.4	9.6	9.7	9.8	10	10.1	10.3
Softwood pulplogs	6.1	5.8	5.5	5.4	5.3	5.2	5.3	5.3	5.3
<i>Total softwood</i>	15.1	15	15	15	15	15.1	15.2	15.4	15.7
Hardwood sawlogs	0.2	0.3	0.4	1.4	1.4	1.3	1.3	1.4	1.5
Hardwood pulplogs	2.4	8.3	10.8	10.7	10.6	10.6	10.3	10.2	10.1
<i>Total hardwood</i>	2.6	8.6	11.2	12.1	12	11.9	11.6	11.6	11.6
<b>Total log supply</b>	<b>17.7</b>	<b>23.6</b>	<b>26.2</b>	<b>27.1</b>	<b>27</b>	<b>27</b>	<b>26.8</b>	<b>27</b>	<b>27.3</b>

Source: BRS 2002



## 1.4 INDUSTRY INFORMATION

The Australian forest industry contributes \$14 billion pa and about 1% GDP to the nation's economy.<sup>iv</sup> The industry has strong growth. Annual turnover increased by 11.8%, or \$1.4 billion, between 1998-99 and 1999-2000.<sup>v</sup> Despite Australia's large forest estates and harvests, Australia has an annual deficit in forest products trade.<sup>vi</sup> Forest product imports totalled more than \$3.5 billion in 2001-02 and included 735,500 m<sup>3</sup> of sawn wood and more than 1.24 million tonnes of paper products. However exports - mainly woodchips and corrugating grades of paperboard totalled only \$1.9 billion.<sup>vii</sup>

Overall, employment for the wood and paper industry is stable at about 86,000. It includes people working in the forest, logging and forest products industries. Employment in the industry increased by 8.3% over the year 2000-01.<sup>viii</sup> The forest products industry group is Australia's second largest manufacturing group and a major regional employer.<sup>ix</sup> There have been small changes in employment in some sectors because of mechanisation and changes in the availability of log resources. Australia has about 1140 sawmills. The majority are hardwood mills, producing high value, small volume products. The remaining 32% are softwood sawmills, many at world scale levels of production, with timber predominantly used for structural manufacturing.<sup>x</sup>

Vertical integration into pulp and paper industries has stimulated increasing value-add in the wood and paper manufacturing sub-sector. From 1994-95 to 1999-2000, industry value-adding increased by 12.7%. Value-adding per person rose 16.8% during the same period.

**TABLE 1.1 - EMPLOYMENT IN FORESTRY**

CATEGORY (in thousands)	00-01
Forestry and logging	14,000
Wood and Paper product processing	72,000
<b>Total</b>	<b>86,000</b>

Source: ABS, Manufacturing Industry Australia

**New South Wales** has a total forest cover of 27 Mha, including native forests and plantations. The NSW hardwood sawmilling sector is characterised by a relatively large number of small sawmills. Boral Timber, which accounts for about 60% of log sales, is the State's largest hardwood sawmilling company. Harris Daishowa (Australia) Pty Ltd is one of the largest woodchip exporters in NSW. Visy Industries recently opened a pulp mill that produces 240 Kt pa of kraft linerboard and other kraft papers and boards, as well as 60 Kt pa of wastepaper. The largest MDF plant in NSW, Carter Holt Harvey Panels, has an annual capacity of 270 Km<sup>3</sup>. In addition, international companies, such as Weyerhaeuser's softwood sawmill

at Tumut and their I-beam facility at Newcastle, and Norske Skog's paper mill at Albury, have increased investments in this State.

**Victoria** has a forest cover of 8 Mha. The major plantation companies in Victoria include Hancock Victorian Plantations Pty Ltd, which owns about 170 Kha of the total 345 Kha of softwood and hardwood in the State. Grand Ridge Plantations Pty Ltd, a subsidiary of Hancock Victoria Plantations Pty Ltd, manages around 35,000 ha of hardwood plantations and Midway manages around 15,000 ha softwood and hardwood plantations on behalf of investors, including Mitsui and Nippon (of Japan). Processing capacity is dominated by Carter Holt Harvey softwood sawmill, Sumitomo MDF mill, Australian Paper, and consortiums of smaller hardwood mill owners (focusing on value rather than volume) and export companies such as Radex and Midway (using the port at Geelong) and Auspine and Green Triangle Forest Products (using the port at Portland).

**Queensland's** forest cover of 46.4 Mha equates to the largest area of land under forest of all the Australian States. Queensland's major softwood sawmiller is Hyne and Son. Hyne and Son is also the major user of sawlogs, accounting for 40% of Queensland's sawlogs. One of the State's largest exporters is Queensland Commodity Exports, which exports about 250 Kt a year of woodchips. In addition, Weyerhaeuser operates a softwood mill and Fletcher Building Limited (previously the Laminex Group) operates a panel mill in the south east of the state.

**South Australia,** ForestrySA, Auspine and Green Triangle Forest Products Pty Ltd own or manage more than 97% of the State's softwood plantation. ForestrySA manages South Australia's largest plantation forest area, with 96% of its plantations Radiata. The major centre of commercial timber production is in the south east region, which has processing capacity of more than 3 Mm<sup>3</sup> pa. The largest plywood producer is Carter Holt Harvey (CCH), which has two plants, one in Victoria and one in South Australia. The South Australian plant can produce 75 Km<sup>3</sup>. In addition, there are around 100 kha of hardwood plantations established predominately with private funds sourced from Australian and international investment companies, such as Mitsui Plantation Development (Australia) Pty Ltd and Nippon Paper Treefarm Australia Pty Ltd.

**Western Australia** has 35.1 Mha of forest cover. There are currently over 100 kha of softwood plantations and over 230 kha of hardwood plantations in the State. Forestry activities are centred within two regions, the 'Great Southern' region (centred on the Port of Albany) and the 'South West' region (centred on the Port of Bunbury). Hardwood plantations have attracted private Australian and international investment

companies, including Oji Paper (which manages around 20 kha and is one of the largest Japanese paper makers), Marubeni Co (which manages around 30 kha and is one of Japan's most diversified trading companies) and the Japanese trading house Itochu. Wespine Industries Pty Ltd dominates the current and long-term sawlog harvest in Western Australia. Wespine industries produces softwood sawn wood, MDF and particleboard, and is the largest softwood pulpwood producer in Western Australia- producing about 270 Km3 pa. Woodchips are exported from both ports which provide a focus for international market development for the emerging hardwood plantation resource.

**Tasmania's** total plantation resource is 195.2 Kha, of which 119.6 Kha is hardwood plantations and 75.6 Kha is softwood plantations. Gunns Limited is

the largest hardwood plantation manager in Tasmania with an estimated 76 Kha. Gunns is also the largest decorative veneer producer in Australia and the largest hardwood woodchip exporter. Norske Skog operates a pulp and paper mill as well as managing 18.3 Kha of softwood and 3kha of hardwood plantations. Rayonier manage nearly 40 kha of softwood plantations on behalf of the Tasmanian Government and GMO Renewable Resources (joint owners).

**Australian Capital Territory.** More than half the total land area in the ACT is native forest. Native forest covers an area of 136 Kha. ACT Forests (ACTF), an agency of the Territory's Government, manages 26 Kha of land, with 16.2 Kha of the land being softwood plantations. The major processing company is Integrated Wood Products Pty Ltd a sawnwood output of 36 Km3 and log input of 85 Km3.

## 1.5 POTENTIAL INVESTMENT OPPORTUNITIES

Potential investment opportunities include the establishment of:

- World-scale pulp and/or paper mills in south west Western Australia, northern Tasmania and the Green Triangle region of South Australia, using hardwood plantation fibre. Australia has the capacity to support a world-scale pulp mill. It has large volumes of plantation hardwood pulpwood available and offers huge opportunities for import replacement in the domestic market and exports to the nearby, rapidly growing, Chinese market. On a world scale, there is currently 750Kt pa production output. Total pulp imported was 314.0 Kt. Low costs in declining wood chip prices and the depreciation of the Australian dollar against the US dollar means a pulp mill in Australia is potentially more competitive. While the potential for softwood based pulp and paper mills is limited, an example of a recent pulp mill investment in Australia is Visy Industries' \$400 million investment in a softwood based pulp mill producing kraft linerboard at Tumut, NSW.

**TABLE 1.2 – FORECAST PLANTATION PULPWOOD SUPPLY**

Pulpwood (Hardwood)	2001-04	2005-09	2010-14	2015-19	2020-24	2025-29	2030-34	2035-39	2040-44
Western Australia	1339	4421	4251	4148	4126	4174	4245	4318	4367
Tasmania	551	1189	3358	3404	3353	3163	2905	2664	2457
Green Triangle	64	1787	1930	1985	2044	2095	2161	2233	2318
Victoria	367	495	823	759	706	743	645	607	524
South East Queensland	2	239	210	195	183	176	163	143	108

(BRS 2002) - (m<sup>3</sup> x 1000)

The significant increases in hardwood plantations allow for several additional opportunities to expand the current industry capacity or develop more niche-type activities throughout Australia.

- New or expanded sawlog production in Tasmania, Western Australia, central and eastern Victoria, southern NSW and north Queensland, using softwood and/or hardwood plantation sawlogs. An example: AKD Sawmill \$30m 1997 Colac, VIC

**TABLE 1.3 – FORECAST SOFTWOOD SAWLOG SUPPLY**

Sawlogs (Softwood)	2001-04	2005-09	2010-14	2015-19	2020-24	2025-29	2030-34	2035-39	2040-44
Western Australia	703	702	700	702	714	735	762	782	795
Tasmania	768	828	877	907	926	941	946	940	924
Central Victoria	372	348	323	294	263	249	256	272	287
East Gippsland/Bombala	407	425	440	447	436	396	334	264	196
North Queensland	164	184	218	218	218	218	218	218	218

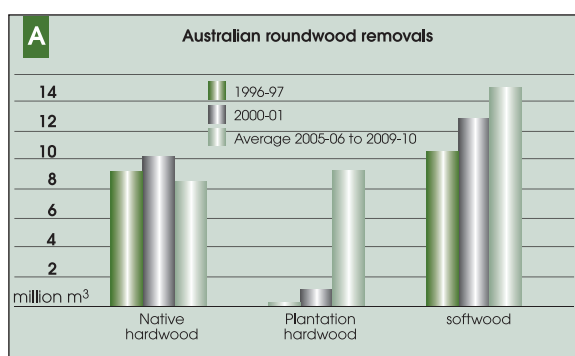
(BRS 2002) - (m<sup>3</sup> x 1000)



- New or expanded panel production facilities** in all States, including laminated veneer lumber, medium density fibreboards, particleboard and plywood. Ongoing growth in MDF exports is likely as new owners of mills drive for export performance and have stronger links with existing markets than previous owners. There may also be opportunities for expansion of plywood/LVL production that will be driven by increasing use of I-Beams in domestic construction and potential export of radiata plywood/LVL to Japan. Production of plywood and medium density fibreboard has grown significantly over the past five years. Current MDF production is 712 Km<sup>3</sup>, while plywood production has grown to 157 Km<sup>3</sup>. This growth is expected to continue. Over the same time, particleboard production was 904 Km<sup>3</sup>. Examples of new or expanded panel production are: CHH set up a Highland Pine Sawmill and MDF plant in 1995 valued at \$200m at Oberon, NSW, and Monsbent established a new particleboard line valued at \$70m in 2001 at Benalla, Victoria.

## 1.6 NATIONAL PRODUCTION

FIGURE 1.1



Source: ABARE Current Issue: Rising domestic plantation wood supplies

## PAPER

Overall production of paper products decreased from 1999-2000 to 2000-01. There were small increases in the printing and writing and tissue categories, with all other categories recording a small drop in production. Exports increased over this time. However, this was offset by a larger decrease in imports. As a result, apparent consumption decreased.

TABLE 1.4

Apparent Consumption of Paper (tonnes x 1000) as at 30 June 2001				
Product	Prod'n.	Exports	Imports	Consumption
Newsprint	396	0	284	680
Printings & Writing	586	83	760	1263
Tissues*	202	3	55	254
Packaging & Industrial	1472	319	311	1464
Total	2656	405	1410	3661

\*Includes an estimate for non-member companies

Source: APIC

## PLANTATIONS

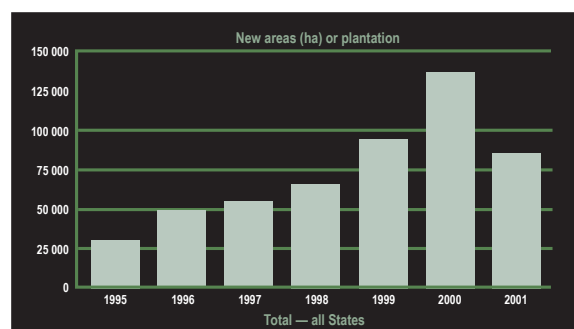
Growth in plantations has been almost entirely driven by managed investment schemes that offered significant tax deductions for high-income earners. Before July 2000, Japanese investors were able to claim an immediate tax deduction for a prepaid service in one financial year, while the actual payments against the deduction could be made in the following financial year. In light of the new tax laws, managed investment schemes planted considerably more than their usual annual planting rate in 2000. The GST (Goods and Services Tax) was introduced in July 2000 and, under the recommendations made by the Ralph Report, the pre-payments for services were no longer immediately tax deductible. This resulted in lower rates of planting than anticipated. In 2002 the Commonwealth Parliament passed amendments to the taxation laws in recognition of the long term nature of plantation forestry. One element of these changes was the introduction of a '12-month pre-payment rule' which provides taxation entitlements for investors in managed plantation investment schemes.

The National Plantation Inventory for the 2001 calendar year, reports that 85,777 hectares were planted in 2001, bringing the total plantation estate (including both hardwood and softwood) to 1,568,900 hectares.

Industry and governments have agreed on a goal to establish 3 million hectares of plantation forests in Australia by 2020. Average annual plantings of 75,000 hectares are required to meet this target and current average plantings (from 1997) indicate that Australia remains well on track to meet its target.

Within Australia, Victoria had the largest area of new plantations, with 34% of all new hardwood plantations in 2001. Western Australia was the chosen location for 39% of all new softwood plantations.

FIGURE 1.2



## 1.7 EXPORTS

Australia is one of the world's largest woodchip exporters. Japan is our largest market, accounting for 95% of our total exports, with our pulp used in the production of uncoated paper. Most woodchip exports are derived from low-quality logs produced from harvesting operations. Australia exported 4.7 Mt of woodchips in 2001-02. Portland, Victoria, is the second largest softwood chip facility in the world. In 2002, it accounted for 58% of Australia's total softwood chip exports. The majority of hardwood woodchips exported from Australia are sourced from Tasmania.

Woodchips are a major source of export earnings representing 41% of the total value of forest products exported in 2000-01. The importance of woodchips to Australia's export performance has been declining in recent years as growth in exports of other forest products has expanded, particularly in the areas of medium density fibreboard, coniferous veneer and sheets for ply. Coniferous veneer and sheets for ply have experienced considerable growth over the past 3-4 years. From 1999 to 2001, exports have increased by a total of 342%. This expansion has mainly been exported to Spain.

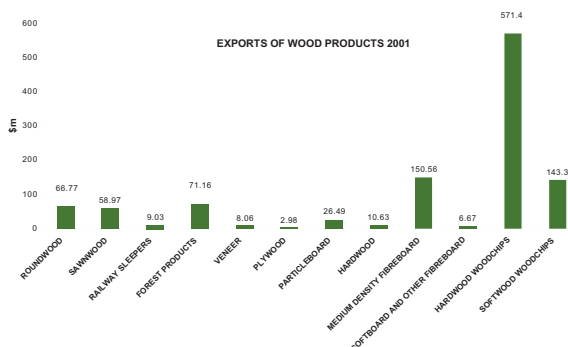
**TABLE 1.5 EXPORTS - VOLUME OF WOOD PRODUCTS 2001 ('000 M3)**

	1997-98	1998-99	1999-00	2000-01	2001-02
ROUNDWOOD	391	778	1150	1094	1192
SAWNWOOD	38	51	90	86	128
RAILWAY SLEEPERS	8	16	17	24	14
PLYWOOD	2	4	10	7	19
PARTICLEBOARD	61	77	69	98	100
HARDWOOD	0	0	5	6	10
MEDIUM DENSITY FIBREBOARD	139	206	288	389	403
SOFTBOARD AND OTHER FIBREBOARD	9	17	19	12	15
VENEERS	1	3	4	6	6

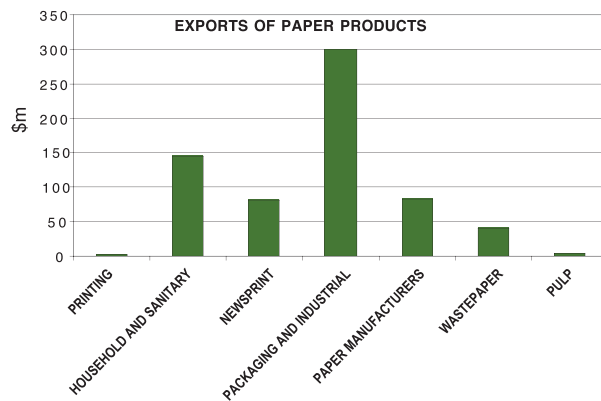
**TABLE 1.6 EXPORTS - VOLUME OF PAPER PRODUCTS (KT)**

	1997-98	1998-99	1999-00	2000-01	2001-02
NEWSPRINT	15	13	2	3	1
PRINTING AND WRITING	47	60	97	100	142
HOUSEHOLD AND SANITARY	15	15	23	23	43
PACKAGING AND INDUSTRIAL	356	289	384	404	461
TOTAL (b)	433	377	506	530	648

**FIGURE 1.3**



**FIGURE 1.4**



Total sales revenue increased over 1999-2000 due to an increase in local sales and exports. Local sales increased by \$5 million while exports increased by \$52 million. Exports accounted for 12% of total sales. The value of exports increased for all categories, except waste paper. Analysis of the volume of export paper shows there is a strong upward trend in Australia's exports of printing and writing paper. Household and sanitary paper is showing a steady upward trend. Corrugating medium was by far the largest export item with exports increasing rapidly from 1996-97 to 1998-99. Copy paper is another major export (printing and writing paper category) along with coated packaging paper.

## 1.8 IMPORTS

There has been a long-term decline in imports of structural wood as domestically produced sawn softwood has become more competitive with imports. The share of wood-based panel imports has been rising. This reflects the availability of low-cost wood-based panel imports and structural wood imports.

Against the long-term trend, in the September quarter of 2001, imports of forest products rose to \$928 million, up 17%. This is mainly attributed to a 30% rise in the volume of sawnwood imports that helped to substitute the large drop in domestic production. Production fell in a number of products. However, the 21% decline in medium density fibreboard was a major contributor. Strengthening demand from the housing sector in September quarter is expected to increase demand for structural wood in the December quarter due to the lagged effect.

The drop in import prices meant that the increase in the value of exports was modest. Imports increased in paper and paperboard, and household and sanitary paper.

The quantity of tissue and paper imports rose by 22%. Imports of paper and paperboard slightly decreased in 2001-02. The packaging grade coated cartonboard has shown a growth of 7.4%. The value of imports for all grades increased.

# AUSTRALIAN FOREST PRODUCTS INDUSTRY

Overall, Australia has a deficit in its forest products trade. This is due to the current lack of processing facilities to add value to the raw material. Australia is exporting woodchips and importing paper and paperboard products that account for about two thirds of the value of imports. Reducing the trade deficit is contingent on encouraging investment and adding value to Australia's forest resources.

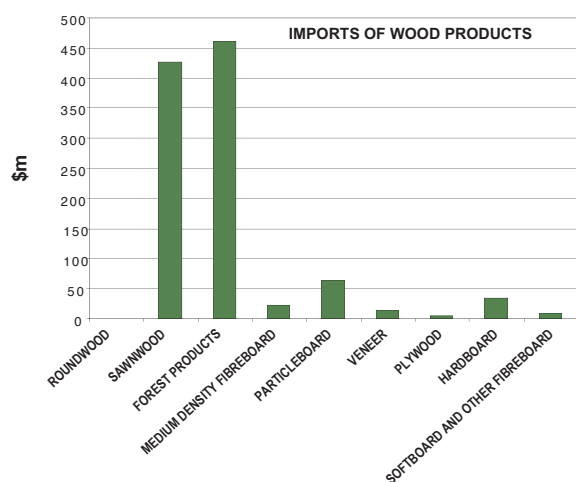
**TABLE 1.7 IMPORTS – VOLUME OF WOOD PRODUCTS ('000 m<sup>3</sup>)**

	1997-98	1998-99	1999-00	2000-01	2001-02
Roundwood	6.1	5.7	2.3	1.3	0.9
Sawnwood	784	775	970	719	735
Veneer	22	19	20	14	15
Plywood	89	100	114	97	116
Particleboard	17	22	32	44	70
Hardboard	6	8	9	8	7
Medium density fibreboard	77	74	138	88	81
Softboard and fibreboard	23	17	26	33	20

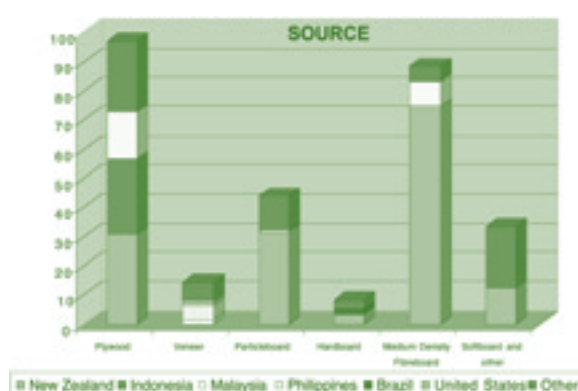
**TABLE 1.8 - IMPORTS VOLUME OF PAPER PRODUCTS (Kt)**

	1997-98	1998-99	1999-00	2000-01	2001-02
Newsprint	289	275	293	284	224
Printing and writing	742	718	839	760	754
Household and sanitary	32	40	53	55	56
Packaging and industrial	276	264	325	311	213

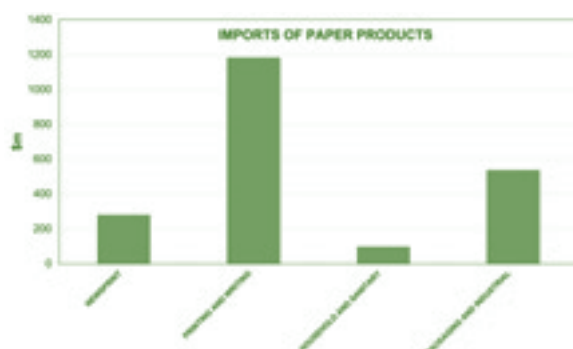
**FIGURE 1.5**



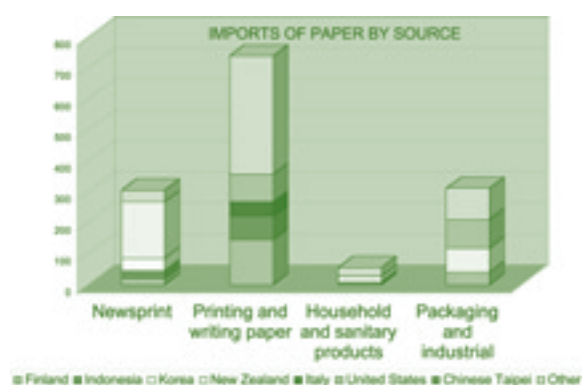
**FIGURE 1.6**



**FIGURE 1.7**



**FIGURE 1.8**



## 1.9 PRICING INFORMATION

TABLE 1.9

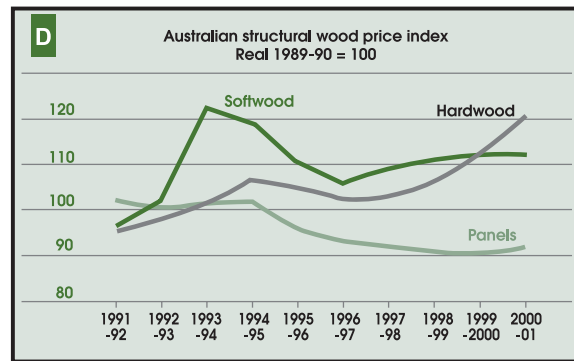
	HARDWOOD (index)	SOFTWOOD (index)	PLYWOOD AND BOARD (index)	HARDWOOD CHIPS \$/t	SOFTWOOD CHIPS \$/t	NEWSPRINT \$/t
1996-97	118.6	123.2	108.2	82.63	61.87	888.2
1997-98	121.6	129.2	109	77.33	64.36	900.13
1998-99	126.8	133	108.7	77.51	65.95	930.02
1999-00	138.1	137.9	110.9	71.4	61.16	942.99
2000-01	150.5	139.5	114.2	74.37	69.46	961.77

The above table shows the ABS price indices. Prices are collated in dollar values, but are published as an index with 1989-90 as the base year. Prices rose sharply in 1993-94, triggered by the US Government's decision to drastically reduce harvesting of logs from forests in the US, causing a massive spike in timber prices. The price of softwood timber and hardwood timber has generally increased in real terms since 1993.

The past decade shows that reduced hardwood sawlogs and increased availability of softwood sawlogs and pulpwood have resulted in some major changes in the relative prices of these inputs to production and, consequently, in the production mix of structural wood products and their prices to consumers. Sawn hardwood prices rose strongly relative to sawn softwood and pulpwood based products such as wood-based panels. Sawn hardwood consumption is projected to decline from 1.2 Mm3 (style m3) in 2000-01 to 1 Mm3 in 2006-07, while sawn softwood consumption is projected to rise from 2.9 million to 3.7 Mm3. It is expected that higher sawn softwood production will increase the availability of low-priced sawn softwood. Reconstituted structural wood products will remain competitively priced, their use continuing to be constrained to niche markets by building preferences.

Source: ABARE

FIGURE 1.9



Source: ABARE Current Issue: Risina Domestic Plantation Wood Supplies

## WORLD PRICES

The price of wood and wood products has been relatively constant in real terms over the past 20-25 years. In real Australian dollar terms, world import prices for roundwood and sawnwood have been on a slight downward trend. Changes in world sawnwood prices have tended to mirror movements in world roundwood prices. Wood-based panels have shown the most rapid price falls. Falling panel and softwood prices were a result of improvements in milling technology and in the scale of manufacturing plants. Rising hardwood prices resulted from tight supply for hardwood logs. Domestic prices for softwood, hardwood and wood-based panels moved with world prices over the 25-year period. Australian export prices were also close to the world average export price.

## PULP

Pulp prices peaked to their highest level ever in 1994 as a result of the US Government's considerable reduction in logging. By April 1996, pulp prices plunged to a historic low of about \$US370/ADMT. Prices increased rapidly in 1999 to \$US710/ADMT before the market collapse. Pulp prices have been affected by increased pulp capacity in Indonesia and Thailand, the use of waste paper and speculative trading on spot markets, as well as higher wood costs.

In the past decade, there has been a significant increase in the rate of recovered paper. This has meant that, in some areas, less virgin pulp is required. China, Korea and Indonesia are the biggest importers of recovered paper, with the US the largest source.

## 1.10 MAJOR PLAYERS - DOMESTIC

**TABLE 2.0 - PAPER MARKET**

Company
Australian Paper
Amcor Limited
Norske Skog Paper Mills
Carter Holt Harvey Tissue Ltd
Kimberley-Clark Australia
Visy Paper Pty Ltd

**TABLE 2.1 - SAWN HARDWOOD**

Company	Production (sawn output)
Boral	113,030
Bunnings	121,000
Fennings Timbers	N/a
Gunns Limited	180,000

Source: Margules Poyry Pty Ltd p.195

**TABLE 2.2 - SAWN SOFTWOOD**

Company	Production ('000 m3)
Boral	187
Brown and Dureau	160
Carter Holt Harvey	280
Hyne and Sons	150
Auspine	220
Wespine	240,000 input
Weyerhaeuser	570

**TABLE 2.3 - PLYWOOD**

Company	Production ('000m <sup>3</sup> )
Boral Hancock	<150
Carter Holt Harvey	70
Big River Timbers	18

**TABLE 2.4 - LVL – LAMINATED VENEER LUMBER**

Company	Production ('000 m <sup>3</sup> )
Carter Holt Harvey	40,000

**TABLE 2.5 - PARTICLE BOARD**

Company	Output ('000 m3)
CHH - Boral	520
Fletcher Building	110
Wesfi	180
D & R Henderson	50

**TABLE 2.6 - MEDIUM DENSITY FIBREBOARD**

Company	Production ('000 m <sup>3</sup> )
Fletcher Building	315
CHH	450
Wesfi	90
Sumitomo	150

## DECORATIVE VENEER

Gunns Veneers - Tasmania  
Brims - Yeerongpilly QLD  
Pro - Veneers - Redbank QLD

## ROTARY VENEER

Boral- Hancock  
Big River Timbers - NSW

## PLYWOOD AND OTHER STRUCTURAL PANELS

Austral Plywoods Pty Ltd - QLD  
Brims Wood Panels Pty Ltd - QLD  
Boral Hancock Plywood - QLD  
Big River Timbers - NSW  
North Coast Plywood Products  
Ausply Pty Ltd  
Carter Holt Harvey  
Carter Holt Harvey  
Brown Wood Panels

## LAMINATED VENEER LUMBER

Carter Holt Harvey

## ORIENTED STRAND BOARD

Not yet manufactured in Australia

## HARDBOARD

WeatherTex Pty Ltd  
Australian Hardboards Ltd

## PARTICLEBOARD

CHH Panels  
D & R Henderson  
Tasmanian Wood Panels  
Amatek

## MEDIUM DENSITY FIBREBOARD

Fletcher Building  
CHH Panels  
Sumitomo  
CHH

## WOOD PULP

Norske Skog  
PaperlinX  
Kimberley- Clark  
Visy Industries  
Australian Paper

## PAPER AND PAPERBOARD

Norske Skog  
Visy Paper  
PaperlinX  
Kimberley-Clark Australia

## 1.11 INTERNATIONAL PLAYERS IN AUSTRALIA - PLANTATIONS

Since the early 1990s, international players in Australian plantations have substantially grown. In 1998, Australia only accounted for 16% of Japanese overseas plantation investment. Of the new area (427 Kha) established by Japan, 40% of the total is planned to be in Australia. Western Australia and the Green Triangle region are the main locations for Japanese plantation investors, with each having about one-quarter of the Australian total target.

Year	Company/ies	(ha)	States
1989	Daishowa Paper Manufacturing Co., Itochu Corp established Harris – Daishowa (Australia)	5000	Victoria, NSW
1993	Hansol Australia a subsidiary of Hansol Forem	10,000	Western Australia
1993	Oji Paper, Itochu Corp, Senshukai Co., Ltd., Tohoku Electric Power Co. Inc. invested in the Albany Plantation Forest Company of Australia.	26,000	Western Australia
1995	Mitsubishi, Mitsubishi Corp, Tepco – Tasmania Forest Holdings Pty Ltd	22,500	Tasmania
1995	Mitsubishi Paper Mills and Mitsubishi Paper Mills Ltd, Mitsubishi Corp., The Tokyo Electric Power Co. Inc., Gunns Ltd formed joint venture Tamer Tree Farms.	25,500	Tasmania
1996	Mitsui Plantation Development (Australia) Pty Ltd Nippon Paper Company, MCA Afforestation Pty Ltd establish The Victorian Bunbury Tree Farms	20,000	Western Australia
1996	Nippon Paper Industries Co. Ltd., Mitsui & Co. Ltd, Midway Pty Ltd., establish Victoria Tree Farm project.	8,000	Victoria
1996	Nippon Paper Industries, Mitsui & Co. Ltd, invest in Green-Triangle Tree farm Project	10,000	Victoria, South Australia
1997	Oji Paper, Nissho Iwai, Toppan establish Green Triangle Plantation Forest Company	20,000	Victoria, South Australia
1997	Tokyo Electric Power Co	10,000	
1998	Hancock Timber Resources purchase of Victorian government softwood resource	246,500	Victoria
1998	Oji Paper, Nissho-Iwai Corp, Toppan Printing Co. Ltd, Hokkaido Electric Power Co. Ltd	5,000	Victoria, Western Australia, South Australia.
1998	Toyota, Mitsui	5000	Western Australia
1999	Oji Paper Co, Nissho-Iwai, Itochu Corp, Kodansha Ltd., Electric Power Development Co. Ltd established Brisbane Plantation Forest Co of Australia.	10,000	Queensland, New South Wales
1999	Oji Paper Co, Nissho-Iwai Corp, Shogakukan Inc., Japan Pulp and Paper Co. Ltd establish East Victoria Plantation Company of Australia	10,000	Victoria
1999	American Weyerhaeuser acquire CSR	20,000	
1999	Marubeni Corp, Chugoku Electric Power Co. Inc., ROHM Co. Ltd., Shueisha Inc. established Southern Plantation Forest Pty Ltd.	10,000	South Australia, Victoria
1999	Tokyo Electric Power Co., Gunns Plantations	7,500	Tasmania
1999	Daio Paper Corp, Kawasho Co, Nissen Co. Ltd, Nakabayashi Co. Ltd, We'll Corporation, Gunns Ltd., Forestry Tasmania formed the Plantation of Tasmania Pty Ltd.	7,500	Tasmania
2000	Tokyo Electric Power Company set up a subsidiary TEPCO Forests Australia Pty	10,000	New South Wales
2000	Shogakukan	500	
2000	Osaka Gas Co, Mitsui	3,000	
2001	Chubu Electric Power Company	N/a	
2001	Shikoku Electric Power Inc. establish Yonden Afforestation Australia Ltd	1,000	Victoria



## NEW FOREST AND WOOD PROCESSING INVESTMENTS IN AUSTRALIA

**TABLE 2.7 - FOREIGN PLAYERS IN AUSTRALIA - FOREST PRODUCTS INDUSTRY**

Company	Location	Product	Investment Type	Decision Year	Approx. value (million AUD)	Investor Origin
Weyerhaeuser	Tumut, NSW	Sawnwood	Brownfield	2000	15	USA
Weyerhaeuser	Dartmoor, VIC	Sawnwood	Brownfield	2000	10	USA
CHH	Morwell, VIC	Sawnwood	Brownfield	1999	20	NZ
CHH	Bell Bay, TAS	MDF	Greenfield	1997	130	Japan
CHH	Morwell, VIC	Sawnwood	Brownfield	1999	20	NZ
CHH	Oberon, NSW	Sawmill, MDF	-	1995	200	NZ
CHH	Nangwarry, SA	LVL	-	1995	40	NZ
Tasco	Lara, VIC	Sawnwood	Greenfield	1995	20	Korea
Sumitomo	Wangaratta, VIC	MDF	Greenfield	1994	100	Malaysia

\*Source: Jaakko Poyry - Facilitating Investment in the Australian Forest Products Industry September 2002 and AUSNEWZ Australian Wood and Forest Products review 2002

\*CHH - Carter Holt Harvey

**TABLE 2.8 - MAJOR FOREST RESOURCE INVESTMENTS IN AUSTRALIA**

Company	Type of investment	Approximate Value (AUD M)	Year	Location
AKD	Sawmill	30	1997	Colac, Vic
Amcor	Deinked pulp	70	1995	Fairfield, Vic
Auspine	Sawmill	30	2000	Tarpeena, SA
Austral (now owned ITI)	Sawmill	15	1996	Holbrook, NSW
Australian Paper	Paper - printing and writing - No 5	320	1995	Maryvale, Vic
Australian Paper	LWC paper machine rebuild	30	1998	Wesley Vale, Tas
CHH	LVL	40	1995	Nangwarry, SA
CHH	Sawmill	20	1999	Morwell, Vic
CSR (now Highland Pine - CHH)	Sawmill and MDF mills	200	1995	Oberon, NSW
D & R Henderson	Sawmill	10	2000	Benalla, Vic
Highland Pine (CHH/Boral)	Sawmill	30	2001	Oberon, NSW
Hyne and Son	Sawmill	15	1999	Imbil, Qld
Hyne and Son	New sawmill	30	2002	Tuan, Qld
Monsbent	New particleboard line	70	2001	Benalla, Vic
Oji	Woodchip mill	10	2002	Albany, WA
Ravenshoe	Sawmill	10	1996	Ravenshoe, Qld
Starwood (now owned CHH)	New MDF mill	130	1997	Bell Bay, Tas
Sumitomo	MDF mills	100	1995	Wangaratta, Vic
Tasco	Sawmills	20	1995	Lara, Vic
Trec (now owned FEA)	New sawmill	15	2000	Bell Bay, Tas
Victree (now AKD)	Sawmill	30	1994	Colac, Vic
Visy Industries	Recycled and packaging board	100	1995	Brisbane, Qld
Visy Industries	Pulp mill - Kraft linerboard	400	2002	Tumut, NSW
Weyerhaeuser	Sawmill	10	2000	Dartmoor, Vic
Weyerhaeuser	Sawmill upgrade	15	2001	Tumut, NSW

Source: URS Wood and Forest Products Industry Review 2002

## 1.12 INTERNATIONAL OUTLOOK

It is predicted that, by the year 2010, there will be a global deficit in the supply of industrial wood, due to the growing demand and declining supply from native forests in many countries. However, excess processing capacity has been created in Indonesia and Thailand where a number of mills are no longer internationally competitive due to a number of factors, including the decline of native forest resource and limited plantation resource.

In contrast, Australia's mature and expanding plantation resource provides an opportunity for investors to procure fibre at a competitive price, source from sustainably and efficiently managed forests.

World supply is expected to decline as supplies from native forests and rainforests become increasingly scarce. Conservation pressures are constraining the logging of coniferous softwood forest in North America. It has been estimated that harvesting from Indonesia and Malaysia will decline by a total of 50 million m<sup>3</sup> by 2020. The International Food and Agricultural Organisation (FAO) estimates that 17 million ha of rainforest are deforested each year.

Other factors influencing world supply include the use of wastepaper. In the US, recycled fibre mills have been established to process wastepaper. Although it is not yet economically efficient, any development in this field has an impact on the price and demand for virgin fibre. The Asian pulp market has also been affected by the impact of the increasing presence of speculators on spot markets. Asian entrepreneurs are adopting a longer-term approach to business risk by securing long-term supplies and negotiating of-take contracts. Finally, wood costs are projected to increase due to increased pressure from environmental organisations. What native forest wood is available will need to be transported increasing distances and some mills will have to consider importing wood at higher costs.

World demand is increasing by about 2.3% per annum; in Asia this is increased to 5%. The two largest economies in Asia are Japan and China. The FAO predicts wood demand will increase by 40% between 1993 and 2010 to more than 5,000 Mm<sup>3</sup> annually.

A wide gap between supply and demand is projected because of these influences. Globally, the annual deficit in softwood timber is predicted to be 410 million m<sup>3</sup> by 2010 and 475 million m<sup>3</sup> by 2020. The gap in hardwood is predicted to be 142 million m<sup>3</sup> by 2010, and 200 million m<sup>3</sup> by 2020. The total gap in 2010 would be more than 32 times current Australian total production. Some analysts believe this will lead to large price increases.

## WORLD PAPER MARKET

2001 marked the third year since World War II of negative growth in world paper consumption. The largest declines were in North America and Western Europe where declines were -5% and -2.5% respectively. Negative growth was attributed to poor economic growth, and political and economic stability. 2001 was preceded by 50 years of continuous growth, clearly showing that paper has maintained its competitiveness in the telematic and digital world. Despite negative growth in 2001, growth is expected to pick up in the US in late 2002, Europe in early 2003 and Japan in late 2003.

## 1.13 GOVERNMENT INITIATIVES

The Commonwealth and State governments have a range of initiatives designed as guidelines for the management of Australia's forest resource. They include:

### National Forest Policy Statement (NFPS)

The NFPS provides a framework for the management of forests. It has 11 broad national goals: conservation; wood production and industry development; integrated and coordinated decision-making and management; private native-forests; plantations; water supply and catchment management; tourism and other economic and social opportunities; education and training; public awareness; education and involvement; research and development; and international responsibilities.

### Regional Forest Agreements

These are agreements that the Commonwealth Government signed with four State governments (New South Wales, Victoria, Tasmania and Western Australia). In particular, they cover regions where commercial timber production is a major forest use. The agreements aim to create balance between the environmental, social, economic and heritage values that the forests provide. They additionally provide certainty for the forest industries and for continuous improvement in ecologically sustainable management of the entire forest estate. The first RFA commenced in 1997. RFAs are 20-year agreements with a five yearly review period.

### Plantations for Australia: the 2020 Vision

In 1997, the Commonwealth, State and Territory governments, and the plantation-based industries endorsed Plantations for Australia: the 2020 Vision. The Vision seeks to enhance regional wealth creation and international competitiveness through a sustainable increase in Australia's plantation resources, with a target of trebling the area of

commercial tree crops by 2020. Average annual plantings of 75,000 hectares are required to meet the Vision target and current average plantings indicate that Australia remains well on track to meet its target.

The role of governments has been to remove impediments, which discriminate against forestry development compared with other agricultural land uses.

The Commonwealth tax treatment for prospectus investments appears to be a major driver of investment. The fact that plantations incur a deductible expense at establishment but that income is several or many years away, makes them an attractive investment for retirement planning.

More than 70% of all new plantations use private capital. The increase in private ownership of plantations has significantly increased investment opportunities and developed a more competitive industry.

## Carbon sinks and carbon credits

An agreement reached in July 2001 in Bonn includes a renegotiated and broadened definition that allows tree plantations to be included as carbon sinks. This has sparked new investment into Australia's forestry sector from companies investigating the use of plantations as a lower cost alternative to reducing emissions. While a number of pilot-scale carbon credit trades have been undertaken in conjunction with State Forests of New South Wales, there is still no legal framework for carbon trading in Australia. An Interim Australian Standard for carbon accounting for afforestation and reforestation was approved on 14 June 2002 and will apply until a national system is established or Australia ratifies the Kyoto Protocol.

## 1.14 STRENGTHS

- Extensive and rapidly expanding hardwood plantation resource. The majority of hardwood plantations are Blue Gum (*Eucalyptus globulus*), which obtains a premium pulp price due to its superior printability, tissue softness and tensile strength
- Extensive high-quality cost-competitive resources, particularly low cost electricity and gas
- Federal and State governments supportive of investment and committed to maintaining sustainable well-managed forests
- Australia is a safe place to invest with a politically and economically stable economy and an exchange rate that supports the competitiveness of enterprise
- The World Competitiveness Yearbook 2002 ranked Australia as number one for having the most available arable land.

- Excellent soil quality and climatic conditions, yielding good rates of tree growth
- Extensive experience in forest management
- Established forest and transport infrastructure, including a modern national and regional road and transport system, a competitive rail network and 11 deep water ports
- Nearby Asian markets
- Access to the latest available and most efficient technology and techniques that will assist foresters to develop the best possible plant breeding techniques to maximise growth and quality of the wood produced
- \$1.7 billion imbalance between imports and consumption indicating import replacement opportunities
- Diversified processing facilities and specialised, high-value, kiln-dried processing capacity
- Environmental benefits - including those of reduced soil erosion, salinity control, carbon sequestration and biodiversity enhancement

## 1.15 CERTIFICATION

### 1.15.1 International Standards Organisation

The International Standards Organisation's "ISO 14000 environmental management system" is a standard recognised in Australia that covers relevant industry sectors. ISO 14001 requires companies to comply with laws and regulations. It also requires continuous improvement of the process and prevention of pollution.

Under ISO, there are no specific performance requirements and no assessment chain of custody for products. Instead, organisations receive certification of compliance. Major government and private organisations and companies with the ISO 14001 certification include: Queensland DPI Forestry, Gunns Limited, Midway Wood Products Pty Ltd, Boral Timber, PaperlinX, Forestry Tasmania, Forestry SA and Carter Holt Harvey.

Companies like Hancock Plantations Pty Ltd, Weyerhaeuser Australia and Norske Skog have developed their own policies and standards for managing their environmental requirements.

### 1.15.2 Australian Forestry Standard

The Commonwealth and State Governments, along with national forestry and forest processing industry organisations, developed the Australian Forestry Standard (AFS) in 2002. The AFS was developed as a system for recognising environmental, economic, social and cultural forest management performance and sustainability in the forest industry. The AFS is best described as being "within the framework of the Montreal Process Criteria and Indicators and the ISO 14000 series of environmental management standards,

but which takes account of local operating conditions.” The AFS can be applied to all of Australia’s production forest systems.

The AFS is based on the following criteria drawn from the Montreal Process Criteria, as well as ISO 14001:

- ensuring a systematic approach to forest management
- public participation
- protecting and maintaining biological diversity;
- maintaining productive capacity;
- maintaining ecosystem health and vitality;
- protecting soil and water resources;
- maintaining the contribution of forests to carbon cycles;
- protecting and maintaining natural and cultural, social, religious and spiritual heritage values; and
- maintaining and enhancing long-term social and economic benefits.

The managers of the Australian Forestry Standard have met the requirements for standard development and stakeholder consultation set out by Standards Australia.

## 1.16 AUSTRALIAN WOODS

### HARDWOODS

MYRTLE, BEECH (lumber, turnery squares, plywood)

BLACK BEAN (boards and in joinery sizes, veneers and veneered panels for flush doors etc)

BLACKBUTT (wide range of sizes)

TASMANIAN BLACKWOOD (available in split staves, sawn material and plain or fancy veneer)

BRUSH BOX (timber is in good supply in boards and structural sizes)

COACHWOOD OR SCENTED SATINWOOD (sawnboards, squares, mouldings, veneers and plywood)

SOUTHERN BLUE GUM (fuel, poles and timber production as an ornamental or shade tree)

SPOTTED GUM (available in large quantities and in a wide range of sizes)

SYDNEY BLUE GUM (available in a full range of standard sizes)

IRONBARK (available in moderate quantity in a wide range of sizes as round, hewn and sawn material)

JARRAH (large quantities available in a wide range of sizes and continuity of supplies is assured, also used in manufactured flooring)

KARRI (Baulks of heart free timber up to 12m in length can be supplied)

MOUNTAIN ASH OR TASMANIAN OAK (among the tallest trees in the world. Timber is readily available in a wide range of sizes)

MULGA (one of the hardest and heaviest woods known, ornamental woodware, strong, durable fence posts and bullock yokes, valuable fuel and charcoal)

QUEENSLAND MAPLE (available in a wide range of board and joinery sizes and as veneers, plywood, laminated panels and flash doors)

QUEENSLAND WALNUT (supplies are mainly veneer and sawn material is also obtainable)

SILKY OAK (timber is available in a range of sizes as well as veneer and plywood)

TALLOWWOOD (available in large quantities in structural sizes and as boards)

TURPENTINE (timber is in good supply in sawn hewn or log form. Used in shipbuilding, and underwater planking and sheeting)

WANDOO (in good supply in round, hewn and sawn form - good for things requiring strength and durability. Used in Australia for railway sleepers, bridge and wharf construction. Also a source of tannin for the leather industry)

### SOFTWOODS

CYPRESS PINE (used for house building in termite-infested areas, parquet flooring, furniture and interior fittings, round poles and posts for fencing)

HOOP PINE (used for flooring, interior joinery, boxes and packing cases. Particularly suited for the manufacture of plywood and veneer. Other uses include agricultural implements, broom handles, matches and matchboxes)

PINUS RADIATA Radiata pine is a versatile and popular plantation species, with almost 700,000 hectares planted in Australia. It grows under a range of conditions and produces large quantities of useable wood over a relatively short rotation. Radiata pine has a relatively low market risk, with established markets for a range of products

## 1.17 INDUSTRY BODIES/ORGANISATIONS

### Department of Agriculture Fisheries and Forestry - Australia

Tel: (61 2) 6272 3933  
www.affa.gov.au

### National Association of Forest Industries

Tel: (61 2) 6285 3833  
www.nafi.com.au

### Australian Forest Growers

Tel: (61 2) 6285 3833  
www.afg.asn.au

### Plantations 2020

Tel: (61 2) 6285 3833  
www.plantations2020.com.au

### Plantation Timber Association of Australia Limited

Tel: (61 3) 9859 2455  
www.ptaa.com.au

### Timber Promotion Council

Tel: (61 3) 9665 9255  
www.tpcvic.org.au

### Australian Paper Industry Council (APIC)

Tel: (61 2) 6295 7312  
www.ppmfa.com.au

## STATE FORESTRY SITES

### Victoria

Tel: (61 3) 9629 5563  
http://www.nre.vic.gov.au/

### South Australia

Tel: (61 8) 8724 2888  
http://www.forestry.sa.gov.au/(tip: to find more forestry information use the search facility)

### Tasmania

Tel: (61 3) 6233 8203  
http://www.forestrytas.com.au/

### Western Australia

Tel: (61 8) 9475 8888  
http://www.fpc.wa.gov.au

### State Forests of New South Wales

Tel: (61 2) 9980 4100  
www.forest.nsw.gov.au

### Forestry in Queensland

Tel: (61 7) 3896 96200  
www.forests.qld.gov.au

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## APPENDIX

WOOD PRODUCTS	DEFINITION	MARKET OPPORTUNITY
<b>SAWN HARDWOOD</b>	The majority of Australia's hardwood comes from the eucalypt species. Major end uses of sawnwood are furniture and cabinets, mouldings and millwork, house construction, concrete formwork.	Declining availability of high-quality hardwood presents real opportunities for Australia. The largest markets for hardwood are China, followed by Malaysia and Indonesia. China has the smallest per capita consumption of hardwood at 0.01m <sup>3</sup> /capita in 2000 compared with Australia's 0.08m <sup>3</sup> per capita. <sup>1</sup>
<b>PLYWOOD</b>	Manufactured from thin sheets of cross-laminated veneer and bonded under heat and pressure with strong adhesives, plywood has been one of the most ubiquitous building products for decades. Production of plywood was traditionally from tropical hardwood. Due to declining availability, eucalyptus plywoods are increasingly being used as substitutes.	Around three quarters of exports go to New Zealand. The expansion of plywood is expected through the increase use of I-Beams in domestic construction and potential for export into Japan. There will be demand-driven opportunity for plywood in the Asia-Pacific market, as future consumption levels will be restricted by limitations in supply rather than demand. Suppliers who can produce quality plywood with low raw materials cost will benefit from this demand-driven opportunity. Properties of plywood based on pine and eucalypt have market potential, as they are now seen as a low cost replacement for tropical hardwood plywood.
<b>PARTICLEBOARD</b>	Particleboard, also known as chipboard, is produced from wood flakes and can be overlaid with a variety of coverings, e.g. paper, melamine, veneers. It is a relatively low-cost wood-based panel and is generally used in the furniture industry.	Production is based on plantation grown softwood. It is not typically transported in raw form. However, value-added processes, such as overlays, natural veneer, allow it to be cost effectively transported. These value-added particleboard products are the main opportunities for Australia
<b>MEDIUM DENSITY FIBREBOARD</b>	Medium density fibreboard is a kind of particleboard formed by gluing and compressing small wood particles together. MDF is suitable for interior use. It is a homogenous product that is the raw material for value-added products, such as veneer or melamine. Australia has developed a strong reputation in this market due to the use of radiata pine fibre.	MDF is expected to become increasingly popular as it becomes a substitute for more traditional products. Consumption is growing in all major markets, with total consumption forecast at 11 million m <sup>3</sup> by 2010. Growing consumption presents opportunities for Greenfield mills and expansion in the existing industry. The product range is also expected to increase with the use of softwood, hardwood and various fibres in future MDF production.
<b>LAMINATED VENEER LUMBER</b>	Laminated veneer lumber (LVL) is an engineered wood product created by layering dried and graded wood veneers with waterproof adhesive into blocks of material known as billets. It is then cured in a heated press. All the veneers are laid with the grain running in the same direction. LVL is 40% stiffer and three times stronger than conventional timber.	LVL is a growth sector substituting for traditional hardwood and imported lumber products. LVL is a relatively new product to Australia and Asia-Pacific markets. Annual domestic demand for the product has a growth of 10-15%, with demand expected to substantially grow over future years. There are opportunities for cost-competitive LVL plants that combine LVL and plywood production. Currently, there are the resources available for such plantations in Australia.
<b>GLUE-LAMINATED LUMBER</b>	The term glue-laminated timber refers to an engineered, stress-rated product comprising parallel assemblies of wood laminations, finger-jointed at the ends and face laminated with exterior-grade adhesives. Each beam is manufactured to a stress-rated formula set by Standards Australia. The lay-up of the beam prescribes the high grades of lumber on the bottom and top to establish the stress grade (f) of the member.	The major Asian market for glue-laminated lumber is Japan where it is increasingly being used in house construction.
<b>WOODCHIPS</b>	Wood for woodchips usually comes from trees too defective to be economically processed, as well as offcuts from sawmills. Woodchips are produced during the initial processing of wood for the manufacture of pulp, paper and panel products. Australia produces hardwood and softwood woodchips.	Australia has an increasing supply of hardwood woodchips due to the rapid expansion of prospectus-driven plantations. The majority of plantations are E. globulus, highly regarded in the production of BHKP. Our major markets for woodchips are Japan (87%), as well as Korea and Taiwan. Australia is in a strong position to increase its market share and develop new markets in countries with scarce resources.
<b>ORIENTED STRAND BOARD</b>	Panel based on pressed wood flakes derived from solid wood. Used mainly in the construction sector	Australia does not produce OSB, and there is no domestic market for it. The major market for OSB is North America. OSB is used in North America as a substitute for plywood in the sheathing market. With an emerging Asia-Pacific market, there are opportunities for OSB to be exported. Resources are available for a plantation in Australia but, with little domestic market, any future production would need to be exported.



# AUSTRALIAN FOREST PRODUCTS INDUSTRY

PAPER PRODUCTS	DEFINITION / USAGE	MARKET OPPORTUNITY
<b>BLEACHED SOFTWOOD KRAFT PULP (BSKP)</b>	BSKP is defined as material consisting of separate fibres used to make paper.	Australia does not produce BSKP and meets its entire consumption through imports. In 1996, imports were 110,000 tonnes. Total consumption of BSKP is expected to reach 5.5 million tonnes by 2010. The Asia-Pacific region is expected to remain a net importer of this grade.
<b>BLEACHED HARDWOOD KRAFT PULP (BHKP)</b>	BHKP is mainly derived from eucalypts due to the excellent quality printing and writing paper it makes.	There is only one producer of BHKP in Australia located in Maryvale, Victoria. Production is about 6 million tonnes. This is expected to increase to 11 million tonnes by 2010. This region has significant capacity to expand and is expected to become a net exporter. With wood being the biggest cost component, Australia has a significant cost advantage with our increasing supply of plantation eucalypt.
<b>NEWSPRINT</b>	Newsprint is the grade of paper used for large-circulation newspapers and directories. It is normally made from mechanical pulp or recycled fibre. There are also improved and coloured varieties available.	Japan, China and South Korea are the main consumers and producers of newsprint. Together, they accounted for 76% of the 9.5 million tonnes of production. The supply of newsprint in the Asia-Pacific is catching up to demand, with the majority of expansion already underway in China.
<b>PRINTING AND WRITING PAPER</b>	Printing and writing paper consists of four categories: uncoated woodfree, coated woodfree, uncoated mechanical and coated mechanicals. Uncoated varieties are mainly used in photocopy paper and high quality newsprints, while coated varieties are used in magazines and advertising brochures.	Printing and writing paper imports account for more than half of all paper and paperboard imports. Consumption of printing and writing paper in Australia has been growing on average 5%pa. However, in 2002 consumption declined by 4.7%. This slump is not predicted to continue as consumption is still projected to increase to around 4.2 million tonnes by 2006-07.
<b>COATED WOODFREE PAPER</b>	'Woodfree' is paper made from chemical pulps. Coated paper is any type of paper where the surface has been treated with a layer of clay or various pigments to improve the quality and smoothness of the paper. BHKP is the major pulp grade used to make this paper, with a small amount of BSKP used for strength.	Australia only has one producer of coated woodfree paper. Australia's consumption continues to grow at 5.4% pa. Australian Paper, the sole producer of coated woodfree paper, is increasing its capacity for coated woodfree grades by 20,000 t/a per year. With no other major new capacity, the net import deficit will reach 360,000 tonnes by 2010.
<b>UNCOATED WOODFREE PAPER</b>	The major uses for this are printing and writing. The most common use is photocopy paper. It usually consists of at least 95% chemical pulp.	Australia produces roughly 70% of consumption locally. Demand is mainly driven by the office paper sector, with consumption expected to increase by 4% per annum until 2010. Australia has adequate resources in a number of regions to allow a woodfree paper plant to be built in conjunction with a BEK (Bleached Eucalyptus Kraft) pulp mill.

# AUSTRALIAN FOREST PRODUCTS INDUSTRY

## RECYCLED FIBRE

Recycled fibre is commonly used in the production of newsprint, tissue, containerboard and carton board. Recycled fibre is an inexpensive raw material, and consumers and government favour expanding its use as a raw material.

Japan, China and Korea are the main markets for recycled fibre accounting for 70% of the 48 million tonnes consumed. Australia exported 300,000t of recovered paper to Asia last year, boosted by the weak Australian dollar. Australia's recovery rate is still below other Asian nations. However, due to our lower costs and less dependence on imported recovered fibre, we are highly competitive. There is opportunity for expansion in the domestic and international markets.

## CARTON BOARDS

Carton board is mainly used in high quality packaging, eg. cosmetics and pharmaceuticals. There is an opportunity to supply export markets with high-quality carton board or the domestic and regional markets with the establishment of a mechanical, chemi-mechanical or BSKP mill.

Japan and China accounted for two-thirds of the 10 million tonnes of total carton board consumption in 2000. China, Hong Kong and Japan are the biggest importers of carton board in the Asia-Pacific. All three countries produce carton board. Excess demand is met through imports from the US and Indonesia. Australia is a net importer of carton board, with our supplies coming from the US and New Zealand. Our sole producer, Amcor, has a capacity of 130,000 t/a and uses this to supply the domestic market.

## CORRUGATING MATERIALS

Corrugating materials are used in the manufacture of corrugated boxes. They are made from either unbleached kraft pulps or recycled fibre. The major products are the recycled fibre-based testliner and recycled fluting.

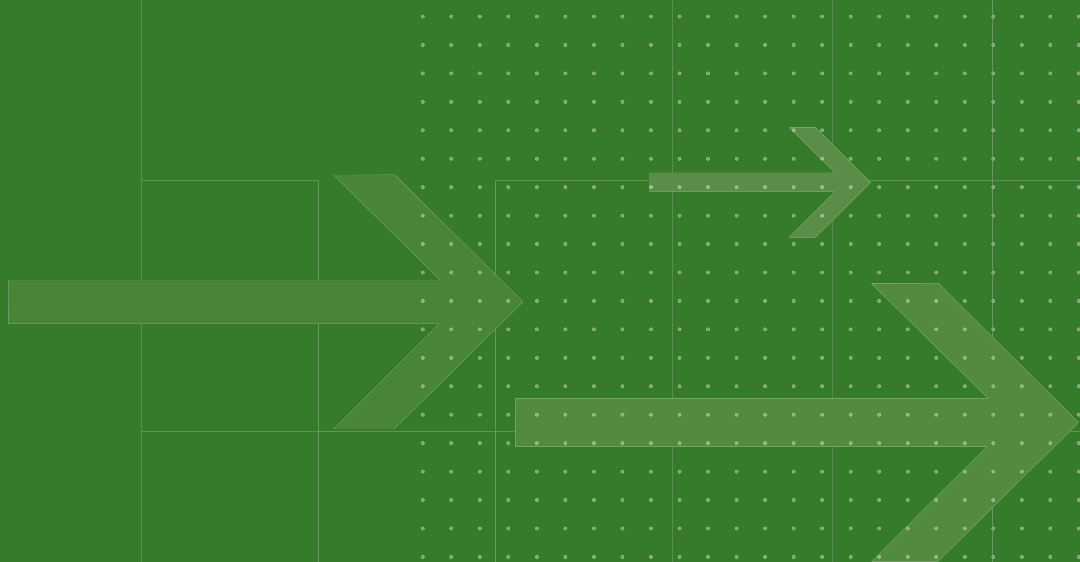
Japan and China account for roughly one third of total consumption (28.6 million tonnes). Production of corrugated materials is also dominated by Japan and China, which account for 61% of world production. Local production met 93% of total regional consumption, and 1.9 million tonnes of corrugating materials were exported to the Asia-Pacific in 2000. There are some major decided projects in China and Australia. Australia produced 1.4 million tonnes of corrugating materials and consumed 1.2 million tonnes in 2000. Visy and Amcor dominate production. The present capacity is sufficient to meet existing demand. As Australia is a net exporter in this market, its domestic market shows limited opportunities for expansion. However, there is opportunity to expand in export markets to the Asia-Pacific.

## MECHANICAL PRINTING PAPERS

Local production of mechanical pulp is limited by our availability of softwood.

Japan, China and Indonesia are the main markets for mechanical pulp. When combined, they account for 90% of consumption. There is no mechanical pulp production in all three countries. In Australia, most paper mills that use mechanical pulp are integrated with mechanical pulp mills. Total production is around 500,000 t/a.

## NOTES



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