

Paper



... a fundamental part of daily living

The extended paper industry, from forestry through to recycling, has much to be proud of in its contribution to environmental sustainability and its efficient use of resources. All elements of the supply chain including forestry practices, pulp and paper manufacture, distribution, pre-press and printing, circulation, and recycling take their responsibilities for minimising their environmental footprint very seriously.

APIA is proud to present this brochure as the first in a series designed to provide information to those involved in our industry, their clients, consumers and other interested parties, aiming to correct any misconceptions existing about the sustainability and environmental effects of the paper and print industry.



Did you know?

GENERAL

- Australia's per capita consumption of paper = 200kg's p.a., equating to 72kg's CO₂ emissions, versus operating a plasma television 5 hours per day x 6 days per week = 450kg's CO₂ emissions.
- The Rio Earth Summit in 1992 adopted global principles to promote sustainable forestry, stating that Sustainable Forestry meant harvesting and environmental management went hand in hand.
- 95% of emissions from land use change originated from tropical developing countries reflecting land use changes tied to development – clearing forest for agricultural production and habitation.
- Worldwide plants and soils store over 7,300 billion tonnes of CO₂ equivalents, more than double that held in the atmosphere (2,700 billion tonnes CO₂).
- Globally, industrial forestry including the planting of new forests (afforestation) and re-establishing old forest areas (reafforestation) is estimated to result in the absorption annually of 1 billion tonnes of CO₂.
- It is estimated that there are 25% more trees in the developed world today than in 1901.
- Ever thought about which resources are sustainable and which ones aren't? For example, wood is sustainable and can be harvested for use and regrown, whilst oil, iron ore, coal, bauxite and gas, for example, are all non-replaceable. Once they are gone, they're gone!

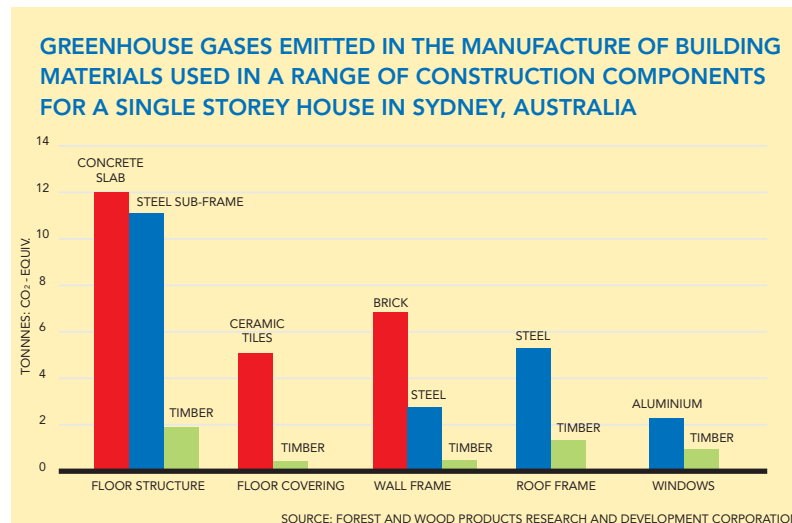
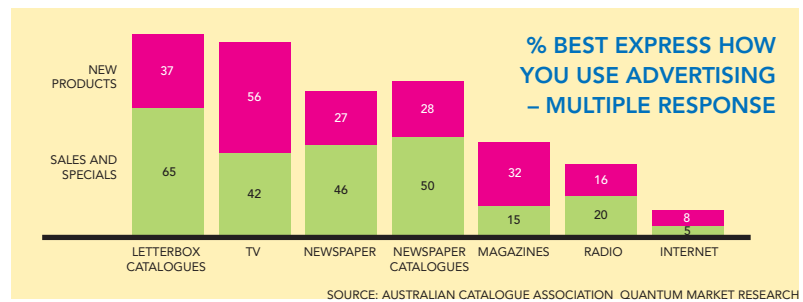
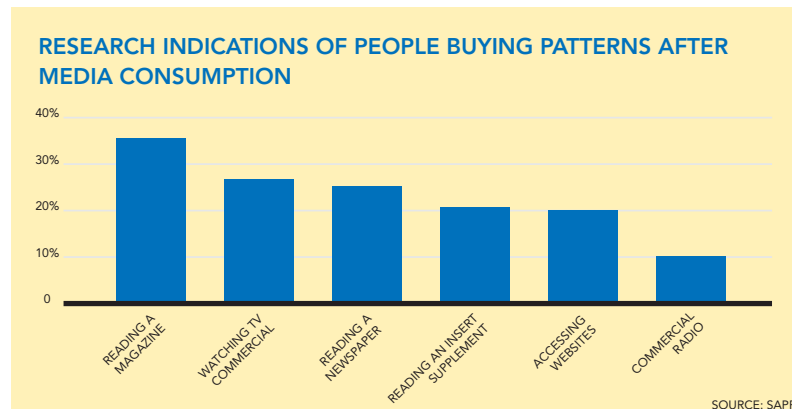
AUSTRALIAN INDUSTRY

- Australia's consumption of paper / paper board is approximately 4.2 million tonnes. (Communication papers – 2.2 million tonnes, Packaging and Industrial – 1.7 million tonnes, Health and Hygiene – 0.3 million tonnes)
- Employment in the "extended" paper industry, including all supply chains from forestry to recycling = 350,000, 3.3% of Australia's total employment.
- Australian imports of printed matter in 2006 were worth A\$1.2 Billion as reported by the ABS.

- In Australia fibre from plantation timber makes up 26% of paper industry fibre needs, regrowth natural forest 8%, sawmill residues 7%, imported pulp 11%, and recovered paper (recycled) 48% – total fibre needs approx. 3.2 million tonnes.
- In Victoria in '06/'07 the area logged by Vicforests from State forest areas was 5,680 hectares, equivalent to 0.167% of total State forests.

By contrast 19.7% of State forest was burnt in the '06/'07 fires.

- About 45% of Tasmania is "locked up" in National Parks, and 86% of "old growth" forests, and 97% of "wet wilderness" forest has permanent protection.
- Australia has a trade deficit of approx. A\$1.96 billion in wood and wood products per year.



FORESTRY

- All forests in Australia cover about 21% of the land mass – 164.42 million hectares.
- 7% of Australia's forests are managed by State Government forestry agencies as potential wood sources and are strictly controlled.
- 13.2% of Australia's forests are set aside as conservation zones / environmental protection.
- Carbon is cycled continuously through the Earth's natural systems – Carbon released (emitted) through "breathing" taking in oxygen and releasing carbon dioxide, and decay of organic matter. Carbon sequestered (absorbed) by plants as they grow, with some transferred to soil.
- Sustainable forestry and increased use of wood and wood products, including paper, increases the absorption and "locking up" of CO₂ emissions through the timber growth, harvest, processing, and re-growth (reafforestation / afforestation) cycle.
- Forests in Australia store an estimated 10.5 billion tonnes of carbon (excluding soil carbon) – equivalent to 38.5 billion tonnes of CO₂ removed from the atmosphere.



- The Eucalypt is capable of sequestering carbon at a rate of 10 tonnes of carbon per hectare per year, and has a positive net carbon balance even when used for pulp and paper production.
- The economic value of the forest and wood products industries in Australia is about A\$18.6 billion – 3% of Gross National Product.
- Australian plantations and commercial forests removed a net 43.7 million tonnes of CO₂ from the atmosphere in 2004.
- Carbon is only released back into the atmosphere when wood or wood products decay or are burnt.
- Firewood and residues from processing wood and wood products contribute about 2.5% of Australia's energy use.
- Net carbon dioxide emissions from generation of electricity using biomass (wood residues etc) are typically only 5-10% of those from fossil fuel (oil and gas) based electricity generation.

FORESTRY AND PAPER ACCREDITATION SCHEMES COMMONLY USED WITHIN AUSTRALIA

The vast majority of paper manufacturers supplying the Australian market are operating under accreditation systems which assist to minimise their impact on the environment and recognise their commitment to SUSTAINABILITY, covering impact on the environment, fibre sourcing, manufacturing processes, and in products delivered to the market.

The major global "systems" include:

- ISO 14001 effective environmental management through the production process.
- EMAS (Eco Management and Audit System – European Council regulation).
- PEFC (Program for the Endorsement of Forest Certification) International accreditation system for recognising sustainable forestry management practices.
- Chain of Custody covering all wood processes from the forest to the consumer.
- FSC (Forest Stewardship Council) An international accreditation system promoting responsible stewardship of the world's forests, covering sustainable use and management.
- Currently approximately 8% of the world's forests are covered by accreditation schemes (PEFC, FSC, or similar) and increasing. Of this only 5% is used within the pulp and paper industry, accounting for 20% of the industry's fibre needs.
- 43% of Australian forests are certified under the AFCS (Australian Forest Certification Scheme – AFS Australian Forestry Standard which is PEFC endorsed) and FSC.

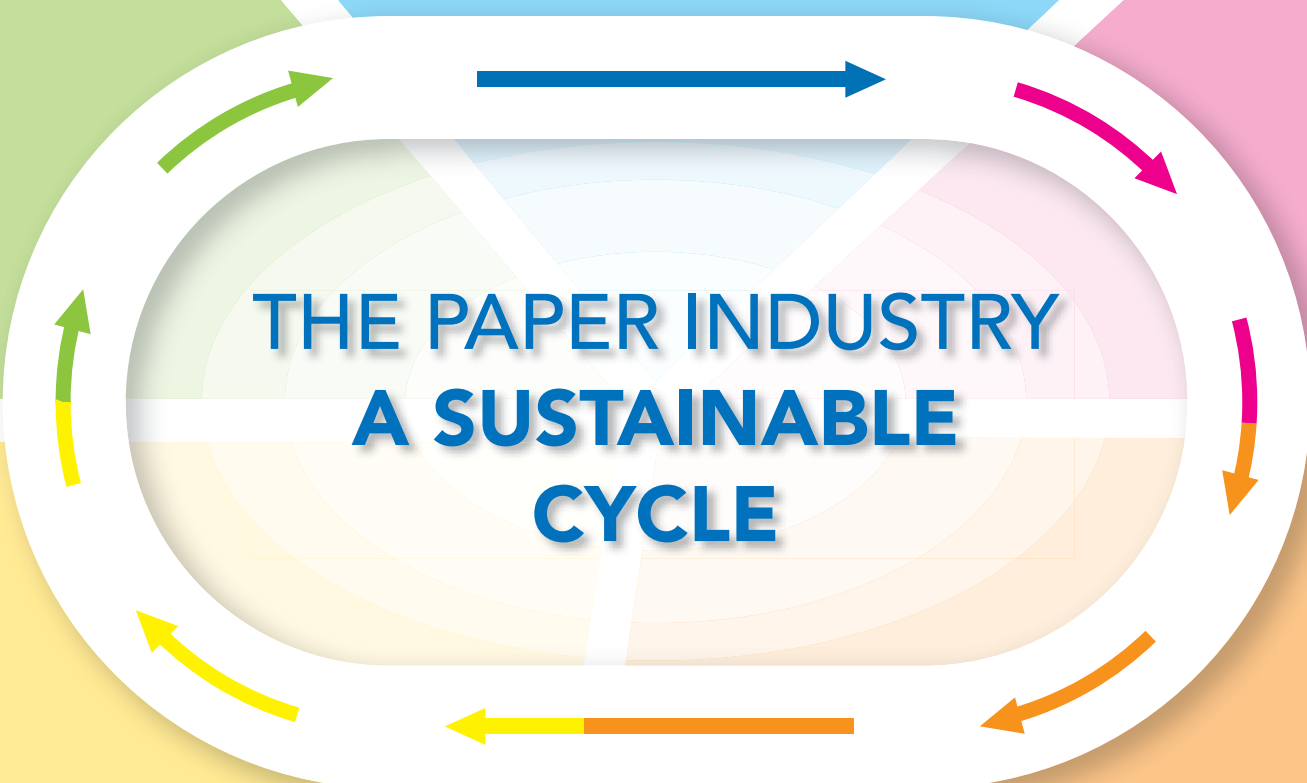
RECYCLING

- Australians recycle approximately 46% of their overall generated waste, growing by 825% over the past 7 years.
- Australia ranks No. 1 in the world for newsprint recycling, which has grown from 28% in 1990 to 75% in 2006 (PNEB).
- Australian Catalogue Association (ACA) estimates recycling rates of catalogues in Australia at around 80%.
- In 2006 waste paper and board collections totalled approximately 2.5 million tonnes, of which around 1.5 million tonnes was used domestically and 1 million tonnes exported, mainly to China and India.
- 48% of the Australian paper manufacturing sectors fibre needs come from recycled paper.
- Australia's overall paper and cardboard recovery and recycling rate is estimated at 64%.
- Reusable pre-press chemistry containers have been introduced to replace previously used 20 litre drums sent to landfill, reducing the environmental impact.

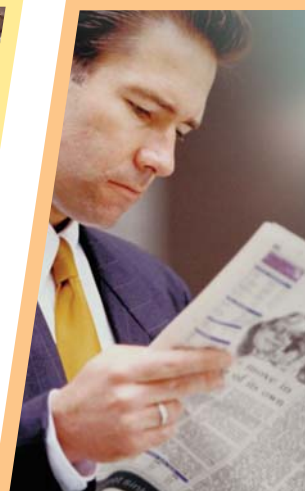


PULP & PAPER PRODUCTION

- Over a number of years the list of the United Nations 100 most “sustainable” industries has included 8 pulp and paper companies – the highest representation of any industry group.
- In Australia 31% of energy used by the pulp & paper sector comes from renewable sources (Biomass & hydro).
- Typical of trends worldwide, Australian paper producers reduced energy consumption per tonne of production by 24% between 1990 - 2003, with further savings made in recent years.
- Similarly in keeping with world-wide trends, CO₂ emissions per tonne of production in Australia reduced by an estimated 21% during 1990 - 2003.
- Water used per tonne of production has reduced by approximately 63% since 1990, with water being used on average up to 5 times in the process.
- The worldwide adoption of either TCF (TOTAL CHLORINE FREE) or ECF (ELEMENTAL CHLORINE FREE) bleaching processes has significantly reduced the use of toxic chemicals & reduced harmful emissions (dioxins).



THE PAPER INDUSTRY A SUSTAINABLE CYCLE



PRINTING

- Print has been a continuous industry since invented in 1455.
- Print based learning said to be 50 times more efficient than screen based. (Massachusetts Institute of Technology study).
- Use of CTP and auto blanket washing has reduced solvent and water use by approx. 90% compared to 1990.
- Make-ready times have reduced from an average of 2 hours to 15 minutes since 1990, reducing paper waste by 80%.
- Australia has approximately 5,000 printing establishments.



PAPER DISTRIBUTION

- Throughout Australia there are over 14 distribution businesses involved in the distribution of paper, plus a number of specialist paper suppliers.
- Forestry to market accreditation, through Chain of Custody requirements, has been gained by many distributors through endorsement by FSC and/or PEFC.
- Australian paper distributors account for approx. A\$1.5 billion in sales per annum.
- Responsible for the distribution of more than 3,000 branded products.
- Many products distributed have acknowledged manufacturing accreditation through ISO 14001, EMAS, FSC, PEFC, or similar.



- Printing employs approximately 115,000 staff directly, equivalent to 10.7% of all manufacturing jobs in Australia.
- Current printing machine technology is reportedly up to 60% more energy efficient than 20 years ago.
- Australia imports approximately 200,000 tonnes of printed matter per annum, excluding packaging.
- Australian Printing industry sales stood at approximately A\$18.8 billion for the year ended June '07.
- Printing Industries Association of Australia has published an Environmental Management Manual available for Australian printers, as well as Green Stamp Program accreditation being trialled by PIAA West Australian region.
- According to studies 87% of Australian householders regularly read unaddressed advertising materials, e.g. catalogues.
- Studies undertaken show that print generates 72% more awareness of products and services by consumers than TV, given a certain budget.
- In Europe the percentages indicate people buying something after media consumption: reading a magazine 36%, watching a television commercial 27%, reading a newspaper 26%, reading an insert supplement 21%, accessing websites 20%, commercial radio 11%.
- 2005 – 2006 ABS statistics show that retail sales of printed material and paper stationery = A\$5.5 billion.
- In the 12 months to end June 2007 Australian magazine gross annual readership reached 963.1 million (MPA).
- Book sales in Australia are about 50 million per annum, with a retail value of around A\$1 billion (Nielsen Bookscan).
- Book sales have averaged 7% per annum growth for the past 3 years in units sold.



Promotion of Paper acknowledgements.

Information for this brochure has been sourced from the following organisations and their members, whom we acknowledge and thank for their cooperation. Further information can be gained from the web sites listed.

Australasian Paper Industry Association Ltd. – www.australasianpaper.org
Australian Catalogue Association – www.catalogue.asn.au
APPITA – www.appita.com.au
Australian Plantation Products and Paper Industry Council (A3P) – www.a3p.asn.au
Australian Forestry Standard Limited – www.forestrystandard.org.au
Australian Bureau of Statistics – www.abs.gov.au
Forest and Wood Products Research and Development Corporation – www.fwprdc.org.au
Graphic Arts Merchants Association of Australia – www.gamaa.net.au
Graphics Arts Services Association of Australia – www.gasaa.asn.au
Lithographic Institute of Australia – www.lia.com.au
Magazine Publishers of Australia – www.magazines.org.au
National Association of Forest Industries – www.nafi.com.au
Nielsen Book Scan – www.nielsen.com
Paper Round – www.paperround.com.au
Printing Industries Association of Australia – www.printnet.com.au
Stern Review On The Economics of Climate Change –
stern_review_economics_climate_change/stern_review_report.cfm
VicForests – www.vicforests.com.au
Visy – www.visy.com.au

Further information is available from:



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“Printed on a **SUSTAINABLE** product, from a **SUSTAINABLE** process”