2020 PULP & PAPER STRATEGIC REVIEW

The Comprehensive Analysis of the Australian and New Zealand Pulp & Paper Industry

SAMPLE

This sample, from the 2020 Pulp & Paper Strategic Review is supplied for information purposes only.

The sample content has been extracted from more than 220 pages of data, tables, charts, analysis and commentary address all the detail, for all grades of paper and paperboard, for both Australia and New Zealand.

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IndustryEdge

2020 PULP & PAPER STRATEGIC REVIEW

The Comprehensive Analysis of the Australian and New Zealand Pulp & Paper Industry

Volume 1: Summary & Overview

How the Strategic Review is Presented

The 2020 Pulp & Paper Strategic Review is presented in volumes. Subscribers to the complete Strategic Review have access to all the following volumes, while others have access to the Printing & Communication Papers Package (Vol: 1 & 3) or the Packaging & Industrial Papers Package (Vol: 1 & 4). Volume 1: Summary & Overview

Volume 2: Fibre Supplies

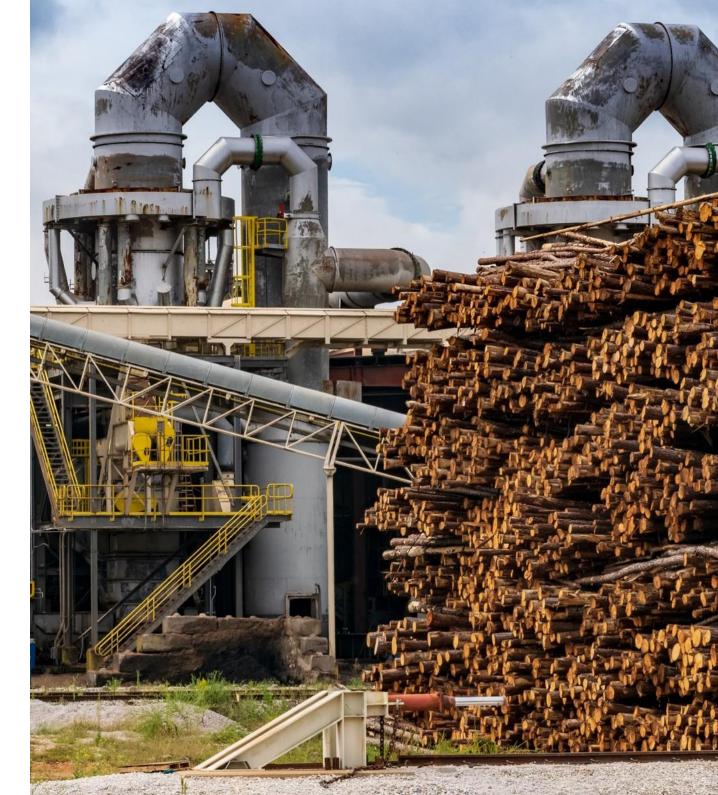
Volume 3: Printing & Communication Papers

Volume 4: Packaging & Industrial Papers

Volume 5: Tissue Papers

To learn more, click here.

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Click here to download IndustryEdge's Overview of Pulping & Papermaking

EXECUTIVE SUMMARY

2020 will likely be remembered as one of the most turbulent non-war years in world history. The impacts of a global health emergency, the temporary cessation of human movement, the derailing of global economic activity and persistent concerns that the world will never be the same are impacting all activities, the world over.

Australia and New Zealand are not immune, and nor is the global pulp, paper and paper products industry.

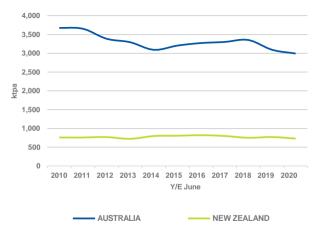
Describing the local experience, in global context, the 2020 edition of the Pulp & Paper Strategic Review provides detailed and comprehensive data, analysis and informed commentary of all major paper and paper products markets in Australia and New Zealand.

The 2020 edition of the Pulp & Paper Strategic Review addresses all major types and grades of paper and paperboard and all fibre supplies used in both countries.

This Executive Summary provides the headlines and frames the rest of Volume 1 and all five volumes of the Strategic Review.

CONSUMPTION -3.3% IN AUSTRALIA, -5.6% IN NEW ZEALAND IN 2019-20

Falling to 2.995 million tonnes in 2019-20, Australia's consumption of paper and paperboard fell below 3.0 million tonnes for the first time in more than 20 years. In New Zealand, consumption of 0.731 million tonnes was the lowest in seven years.

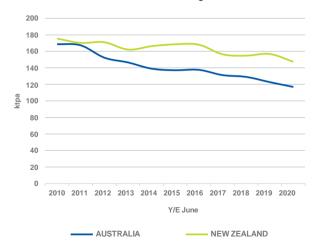


Source: ABS & IndustryEdge research and estimates

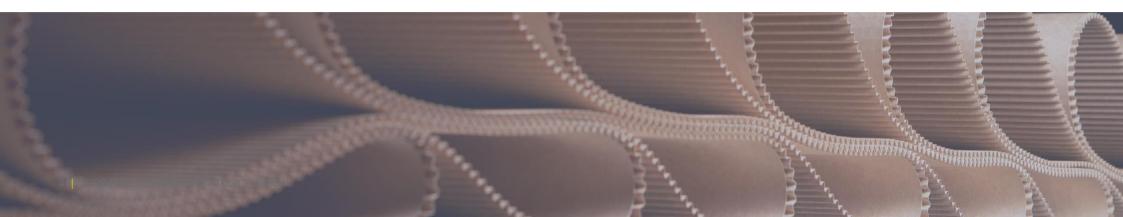
PER CAPITA CONSUMPTION SLIDE CONTINUES

Over the decade to 2019-20, Australia's per capita consumption of paper and paperboard has fallen an average 3.6% per annum. In New Zealand, where a far greater proportion of supply is for industrial purposes, the decline has been a softer 1.7% per annum.

The per capita consumption details for each grade of paper and paperboard in Australia and New Zealand, are included in Volume 1 of the Strategic Review.



Source: ABS, Statistics NZ and IndustryEdge



FORECASTS TO 2025

TOTAL CONSUMPTION COULD FALL AS MUCH AS 480,000 TONNES IN AUSTRALIA AND **50,000 TONNES IN NEW ZEALAND**

Scenario driven forecasts indicate that demand for paper and paperboard will continue to decline in both Australia and New Zealand, through to 2025. The tables show the details, demonstrating that the pace of consumption decline continues to accelerate.

Australia: Forecasts of Paper & Paperboard Demand: 2020 – 2025 (ktpa)

Source: ABS & IndustryEdge research & estimates

YE June	10-Year Scenario	5-Year Scenario	2-Year Scenario		
2020 (actual)					
2021 f					
2022 f					
2023 f	FORECASTS AVAILABLE TO SUBSCRIBERS				
2024 f					
2025 f					
Ave. % Change Per Annum					

New Zealand: Forecasts of Paper & Paperboard Demand: 2020 – 2025 (ktpa) Source: Statistics NZ & IndustryEdge research & estimates

YE June	10-Year Scenario	5-Year Scenario	2-Year Scenario		
2020 (actual)					
2021 f					
2022 f					
2023 f	FOREC	ASTS AVAILABLE TO SUBSC	RIBERS		
2024 f					
2025 f					
Ave. % Change Per Annum					



CURRENT SITUATION CORONAVIRUS AND MORE

This brief analysis was written in August 2020 and updated in September 2020.

The global pandemic, brought on by Co-Vid 19, the novel coronavirus, has continued to play havoc with the global society and economy. The significant risk to public health, both for individuals and collectively, is all too evident, and continues to be serious and dramatic.

As every day passes and the conditions under which the world operates are altered by the pandemic, the health emergency and the response, it is equally clear that the crisis in the global economy deepens.

The world is in a deep global recession.

It is neither prudent nor reasonable to predict the commencement point or pace of the recovery. What does seem clear is that many of the changes being introduced to maintain social and business activity will be lasting.

At a macro-economic level, the latest expectation is that recovery will not occur until at least the end of 2021, and then, it will only be faltering. That is, while one country recovers, another may not, and as one sector's conditions improve, those of another sector may deteriorate.

The most obvious impact is to employment, with millions of people losing their jobs each month, around the world. The flow-on impact of job losses is that households have less income and therefore can spend and consume less. For some products (food and accommodation for instance) this situation has little impact. For other products (clothing for example), it means the virtual cessation of anything but the most necessary sales.

Unemployment is always a key feature of recessions and most disturbingly, it is employment growth that is often slowest to return to pre-recession levels, of all of the major economic indicators.

The other factor that requires consideration is the extent to which growth in developed countries like Australia and New Zealand will be slowed because there is no overseas migration occurring. It is important to note that Australia in particular relies on net annual overseas migration to drive economic growth. New arrivals add to the population, requiring housing and other goods and services that keep the domestic economy moving. It is unrealistic to expect migration to recover until at least the beginning of 2022.

As occurred during the Global Financial Crisis little more than a decade ago, major shifts in behaviour are being experienced. Many, like the rise of online meetings and remote working, are likely to be long-term trends. The rush towards digitisation and the shift online has intensified.

For the paper, paperboard and paper products sectors, the experience of these and other trends has been varied.

Demand for printed material has reduced dramatically, especially for newspapers and many magazines, for which the advertising revenues have fallen sharply. Closed offices are not printing and brochures and other advertising formats like catalogues are also more scarce than before. Even with remote working arrangements, household printing will not replace office and commercial printing. Leaving aside the magnitude of the decline in consumption of these grades, the GFC tells us that a small recovery from the low point will be experienced. We do not know when. But we also know from the GFC that after that initial period of post-pandemic recovery, the rate of consumption decline will accelerate. *IndustryEdge* expects printing and communication paper demand will be significantly lower post-pandemic.

By contrast, though it is reported to be varied among the end-use sectors, demand for packaging and industrial paper and paper products is growing. Corrugated boxes are the prime example of course. With e-commerce fuelled business-to-consumer deliveries exploding, there is little surprise in that. Face-to-face retailers are the losers, but the packaging sector is the winner currently. Again, as each day passes, the trend becomes more entrenched, making a return to traditional retail less likely. *IndustryEdge* expects packaging and industrial paper and paperboard consumption will be permanently higher, including on a per capita basis, post-pandemic.

DEMAND FOR PRINTED MATERIAL HAS REDUCED DRAMATICALLY ESPECIALLY FOR NEWSPAPERS AND MANY MAGAZINES, FOR WHICH THE ADVERTISING REVENUES HAVE FALLEN SHARPLY

Tissue product consumption has been little short of spectacular in recent months, but the ups from panicbuying were quickly replaced by the downs of households holding too much inventory. The sector reports demand for traditional product is fairly stable. That is not true for tissuerelated products in the personal care and hygiene sector. Masks and gowns are the obvious examples. *IndustryEdge* expects tissue demand will be stable post-pandemic.

Read more detailed analysis on demand drivers for the different grades of paper and paperboard <u>here.</u>

If there is an emerging trend that may be positive for future demand of paper, paperboard and paper products, it is possibly going to be the rising emphasis towards 'local' supply and economic activity. There are elements of economic nationalism in this trend, but there is also a strong flavour of economic necessity. Coupled with the still-emerging trend towards a more 'circular' economy, countries are more likely to determine that for national security reasons, they need to manufacture some goods themselves.

The tyranny of distance and some other strategic vulnerabilities indicate that could be the case for Australia and New Zealand. Examples include forms of personal protective equipment.

This would be desirable, but in the meantime, the reality is that consumption of paper, paperboard and paper products is widely varied across the globe and the sectors, with few certainties beyond continued disruptions.

IndustryEdge will continue to provide updates and ongoing analysis via the Pulp & Paper Edge Data & Information Service.

GLOBAL RECOVERED PAPER PRODUCTION

IndustryEdge estimates recovered paper volumes at 231.4 million tonnes worldwide in 2019, with the regional split displayed in the table below.

Asia is struggling to increase its local recovery rates and countries within the region have commenced assertive regulatory practices aimed at reducing imports of contaminated materials. That activity has reduced recovered paper trade with a variety of countries, including New Zealand and Australia. The region still imported a net 29.5 million tonnes of recovered paper in 2019, but this was 16.4% lower than the prior year.

GLOBAL RECOVERED PAPER PRODUCTION BY REGION: 2018 - 2019 (MT)

Source: FAO & IndustryEdge research

Region	Reco	overy	Imp	Imports		Exports		Utilisation	
	2018	2019	2018	2019	2018	2019	2018	2019	
North & Central America	55.6	54.3	3.8	3.6	21.8	18.9	37.6	39.0	
Europe	60.6	61.3	16.1	15.7	24.0	22.7	52.2	54.3	
Asia	99.6	101.6	35.3	29.5	8.2	7.2	130.1	123.9	
South America	7.9	7.3	0.3	0.4	0.1	0.1	7.9	7.6	
Africa	2.2	2.2	0.2	0.2	0.4	0.4	2.0	2.0	
Oceania	3.5	3.4	-	-	1.5	1.4	2.0	2.0	
Total	229.3	230.1	58.9	49.4	56.0	50.7	231.6	231.4	

GLOBAL PAPER AND PAPERBOARD PRODUCTION

Global production of paper and paperboard was estimated at 389 million tonnes in 2019. Asia produced 47% of the world's output, very close to the combined output of North & Central America and Europe.

Growth in Asia remains widespread, including with the installation of new capacity, most of it at massive scale. Old paper machines continue to be retired, especially in China, albeit at a slower rate than was previously the case. Growth in production is now faster in non-China Asia, than in China.

Global production of Packaging paper & paperboard (corrugating materials and cartonboard) and Tissue papers continued to increase at approximately 2% per annum, while Printing & Communication grades are declining, especially Newsprint.

Successive closures of machines manufacturing Printing & Communication grades in Europe and North America continued, in line with the trend in demand. 2019 was a very tough year for Printing & Communication paper grades in particular, and of course, 2020 will be significantly worse.



PAPER INDUSTRY DEMAND DRIVERS

As a general rule, the higher the value of a paper product the more it will be traded internationally. For this reason, Printing and Communication papers are widely traded. Imports make up almost 65% of Australia's supply.

On the other hand, Packaging & Industrial grades (paper and paperboard), especially corrugated container materials, are of relatively lower value. They have strong natural protection, especially if the local participants are integrated (which is the case in Australia and New Zealand). Consequently, international supply and demand has tended to have less opportunities.

In general, demand drivers for all grades of paper and paper products are dictated by broad economic indicators, activity and performance.

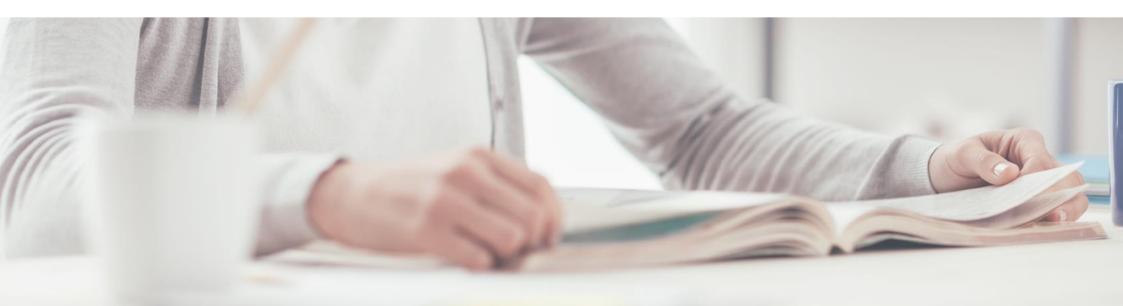
PRINTING & COMMUNICATION PAPERS

The main grades of printing and communication papers (other than Newsprint) and their major end-use applications are set out here.

Source: FAO & IndustryEdge

Main Grade	End-Uses	Major Demand Drivers
Uncoated Mechanical	Brochures, inserts, directories, some publications	Advertising, forms
Coated Mechanical	Catalogues, brochures, inserts and magazines	Advertising, general economic conditions, digitisation
Uncoated Woodfree	General printing, office papers, copy paper	Technological change, commercial expenditure, digitisation
Coated Woodfree	Commercial printing, some publications	Advertising, technological change, general economic conditions, commercial expenditure, digitisation

Click here for more information on paper grades.



TISSUE MARKETS

Markets for Tissue products are generally more regional and domestic than international. This is changing, especially with the rise of very large tissue manufacturing businesses, based primarily in Asia. Because tissue product consumption is dictated by living standards, per capita consumption of tissue products is variable across the globe and accordingly, in aggregate, is quite unpredictable.

In developed countries, tissue products are, for the most part, necessities and their consumption is unlikely to vary with economic activity. The principal demand driver is therefore population levels, with tissue producers relying on increasing per capita income to drive the consumption of more elaborate, value-added products. In developing countries, however, the opposite dynamics may apply, with potentially large growth in demand in one year and a decline in another year, based on changing economic circumstances.

As a result, while ever population remains relatively stable and economic conditions are largely consistent, demand for tissue products will be similarly consistent and stable. Adjustments in demand for tissue products will therefore be limited. As a result, manufacturers seeking to increase their production or improve their market share, typically do so within the existing market through product innovations, brand promotions and occasionally manufacturer led discounting.

PACKAGING, CONTAINER & CARTONBOARD MARKETS

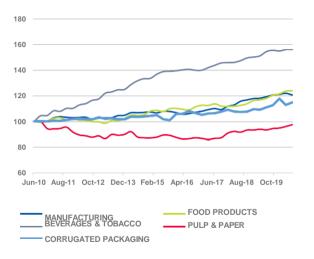
Containerboard and cartonboard markets are directly impacted by the levels of economic activity in their regions of the world, and in the world as a whole. Global consumption comes wrapped in boxes and thus, as consumption rises and falls, so too does the consumption of packaging materials.

Packaging is an integrated part of domestic and regional manufacturing. It does not have an independent market, especially at the consumer level. Raw materials (wood pulp and recovered paper) for manufacturing packaging materials are internationally traded. However, the packaging materials themselves are far less likely to be traded.

It is clear that paper, paperboard and corrugated packaging manufacturers have successfully suppressed input costs and therefore prices, adding value continuously without extracting the same value as their customers or the general manufacturing sectors.

The market for corrugated containers and folding cartons was for a time confined to packaging of food (especially fresh food) and beverage production for export and local consumption. More recently, growth in e-commerce has seen increased consumption of packaging materials, mainly for business-to-consumer delivery of consumer goods and home-delivered foods. The hidden demand includes the transfer from business to business of intermediate goods.

After the early years of the decade, the gross value added in manufacturing managed to parallel growth in GDP. Increasingly constrained by cheaper imports and a natural limit on the volume of food that can be consumed, manufacturing's contribution to GDP has grown at a pace similar to that of food products manufacturing. Over the period, there has been a modest increase in demand for packaging paper and paperboard that is directly linked to food product manufacturing and to a growing volume of food exports from Australia.



Selected Manufacturing Sector Growth vs 'All Manufacturing': Jun '10 – Jun '20: Index (Base: Jun '10 = 100) Source: ABS



PER CAPITA CONSUMPTION

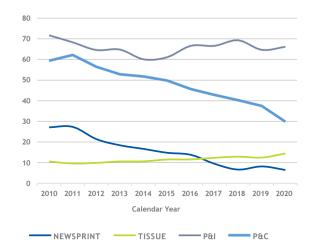
Measuring consumption of paper and paperboard, on a per capita basis provides an alternative means of considering patterns of total consumption. It can be misleading for packaging and industrial paper and paperboard because individuals do not actually consume it and the data does not take into account packaged goods exports.

The chart below shows actual per capita consumption over the decade, by main grade, noting that pre-converted imports are not included in this analysis.

AUSTRALIAN PER CAPITA CONSUMPTION OF PAPER & PAPERBOARD: 2019 AND 2020 (KG & %)

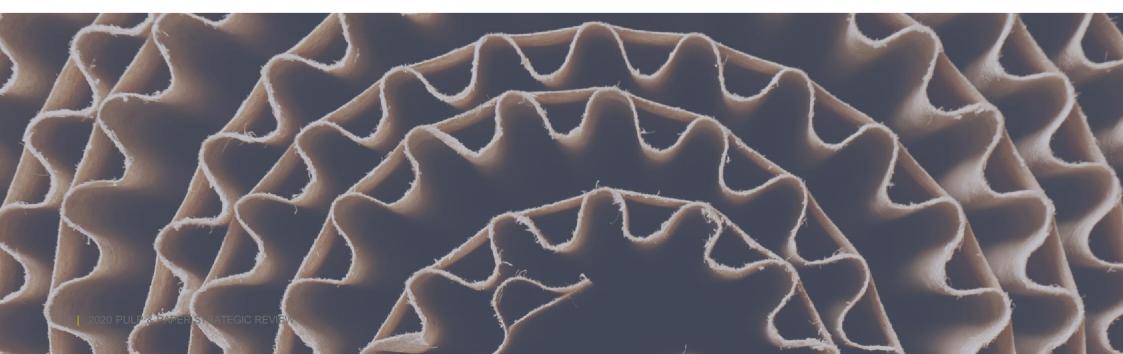
Source: ABS & IndustryEdge research and estimates

Y/E June	2019	2020	% change YoY
Printing & Communication	37.5	29.9	-20.4
Packaging & Industrial	64.7	66.2	+2.3
Tissue	12.5	14.5	+15.9
Newsprint	8.3	6.5	-21.0
Total	122.9	117.1	-4.8



Australian Per Capita Consumption by Main Grade: 2010 – 2020 (kg/person/year)

Source: ABS & IndustryEdge research and estimates



STRATEGIC EVALUATION & RISK ASSESSMENT

The following represents an annual analysis of the Australasian Pulp & Paper Industry, undertaken by *IndustryEdge*, for its internal purposes and to support clients. This evaluation is updated annually and included in the Strategic Review as a snapshot for subscribers.

AUSTRALIAN PULP & PAPER INDUSTRY

Paper and paperboard is a mature industry in the Australian economy. In aggregate, demand lags economic growth. Outside the packaging and industrial papers sector and the population driven growth in tissue consumption, there are few significant growth opportunities.

Packaging paper and paperboard capacity and production has increased over the past decade, with exports now accounting for more than two-fifths of production. Domestic demand is growing, influenced by primary production output, growing food exports and large numbers of internet-based shipments to households.

The global trend of declining demand for printed information is very challenging. Newsprint in particular is in the latter stages of its useful life. The 2020 pandemic has accelerated declines in demand for printing and communication papers of all types, and stalled growth in demand for other grades of paper.

Apparent consumption for tissue remains relatively unimpaired by economic cycles, driven largely by population growth. From 2020 to 2022, it is likely population growth will be severely disabled due to the cessation of migration, related to the 2020 pandemic.

The following are major strategic considerations in respect of the Australian industry.



A AUSTRALIA'S LOW SOVEREIGN RISK [RISK INCREASING]

Australia is a politically stable, robust democracy. In economic terms it has confronted the issues of economic rationalisation, reform and globalisation and, under normal economic conditions, demonstrates growth rates, bank liquidity and employment levels that contribute to a stable investment environment and low sovereign risk. Albeit marginally, the risks of public policy constraining the potential of the pulp and paper industry appear to have risen compared with prior years, particularly with respect to fibre and energy policy.

Economic sovereignty appears to be more threatened than has previously been experienced. Particular concern is expressed about the influence of China on the Australian economy, but in essence, a trans-national and multinational world reduces the sovereignty of all nations to varying degrees.

B. VIRGIN FIBRE RESOURCES [RISK INCREASING]

Australia's large supply of plantation hardwood pulpwood is, in the main, exported, by its now mainly globally oriented owners, most of whom are specialist plantation investors and managers. Access to native forest resources has been declining as successive governments at both a federal and state level place forests into reserves. At Maryvale in Victoria, OPAL (formerly Australian Paper) manufactures a relatively small amount of bleached hardwood kraft pulp, entirely for internal use.

Softwood pulpwood is more tightly constrained, a function of continuing strong demand from a variety of sources (domestic and international), a serious investment failure that has seen only negligible new plantings over the last two decades and serious and compounding bushfire evets that have significantly reduced available wood volumes.

<u>Click here</u> to learn how *IndustryEdge* can assist you to understand wood fibre resources in Australia.

C. SECONDARY FIBRE [RISK DIMINISHED]

Australia has a relatively high level of paper and paperboard consumption per capita. It continues to collect and recycle substantial proportions of packaging paper and board in particular. The domestic industry already uses its full capacity of recovered paper and cannot absorb significantly more.

China's ban on importation of recovered paper (and other recyclables) have been met by an Australian export ban for unsorted recovered paper, commencing mid-2024. In mid-2020, Australia's governments are actively seeking solutions to recycle more than 500 kt per annum of unexportable material. Access to recovered fibre in Australia is unlikely to reduce as a result of this decision and supply may even be enhanced.

D. GEOGRAPHIC ISOLATION [STABLE, BUT EVER PRESENT]

Aside from the formal protection historically afforded the industry, its main strategic strength has been its isolation. A combination of freight costs and shipping times traditionally protected the industry. Shipping time is the sole remaining strength of geographic isolation, but it has also been eroded as steaming times reduce and the main source of supply changes from Europe and America to Asia.

Over the decade to 2020, the average proportion of total paper and paperboard cost represented by shipping and freight declined from 9.3% to 7.1%.

E. ENERGY POLICY, RESOURCES & SECURITY [RISK INCREASING]

Although Australia has abundant reserves of coal and gas, which provide reasonably reliable power, energy supply in Australia has shifted from being a strategic advantage to a cost, investment and operational risk. Alternative investments, in the form of renewable energy technologies continue to be constrained by the absence of an investible 'clean energy target', against which investment can be securitised.

The emissions intensity of domestic paper and board production make the sector particularly vulnerable to inadequate energy policy.

F. AGEING PRODUCTION BASE FOR PRINTING & COMMUNICATION PAPERS [STABLE]

The closure of the Albury mill by Norske Skog in late 2019 'aged' the domestic printing and communication paper base significantly and reduced it to just two mills: Norske Skog's Boyer in Tasmania and OPAL's (formerly Australian Paper) Maryvale in Victoria.

All machines in the Australian sector are below scale, total capacity is limited and for some grades, Australia is entirely reliant upon imports. This is a permanent feature of the Australian industry, as new paper machine investments are unlikely to materialise, given the ongoing declines in consumption of all grades of printing and communication papers.

G. MARKET SIZE VS MACHINE SIZE [STABLE]

While Australia has a high level of consumption per capita, it has a relatively small population. The local market is not large in relation to economically sized production units. What constitutes a world scale production facility in each of the three main sectors; Printing and Communication papers, Packaging and Industrial papers and boards and Tissue, varies considerably.

World scale in Printing and Communication paper machines is now around a half million tonnes (with one million tonne per annum machines now being operated in China) and in packaging it is not much different. In Tissue, however, it would be possible to fit four world scale machines into the local market.

H. LOCAL MARKET ORIENTATION [STABLE]

The local market orientation among paper manufacturers is significant. Until recently, they appeared unwilling to engage in export, and did not do so at any time, in order to support the installation of world scale machines. The exception is the packaging and industrial paper sector, with Visy in particular installing capacity at world scale, using export markets to absorb the excess until local markets grow.



I. MARKET PULP PRODUCTION [DECLINING OPPORTUNITY]

With the exception of the tissue sector and a small quantity of specialty pulps, Australia is self-sufficient for pulp. Australia does not export pulp. The opportunity for the pulp and paper industry in Australia to use hardwood plantation wood resource to manufacture export pulp is fast diminishing, despite the strength of global demand, and continual growth in global market pulp consumption.

Successful market pulp operations require access to abundant and secure resource, efficient and sustainable energy, low sovereign risks for such an investment and secure markets. Several of these factors have a less positive outlook than in previous years. If not taken up in the next two years, *IndustryEdge* expects this opportunity will evaporate entirely.



JRECOVERED PAPER PULP PRODUCTION [OPPORTUNITY]

In the context of item c. (above), in mid-2020, opportunities exist to establish recovered paper pulp as a value-added recycled product for export markets. This opportunity will quickly diminish if not adopted in the next two to three years.

KIMPORT REPLACEMENT [DECLINING OPPORTUNITY]

Australia imports approximately 60% of its printing and communication papers, with particular emphasis on Uncoated Woodfree (UCWF) and Coated Woodfree (CWF) grades. There was once scope for import replacement, especially if Australia and New Zealand were regarded as a single market. The 2020 pandemic and its anticipated impact on printing and communication paper demand has ended this prospect.

This opportunity was taken up by Norske Skog with the conversion of PM2 at its Boyer mill to the production of Light-Weight Coated Mechanical (CM) grade papers.

In packaging and industrial papers, the opportunity is most significant for cartonboard production.

L PRICE DEFLATION [STABLE, BUT UNPREDICTABLE]

For local paper producers, price deflation has bene challenging for more than a decade. Typically led by imports, lower prices are exacerbated when the Australian Dollar's exchange rate is higher against the US Dollar, and especially for grades for which there is global oversupply. The major impact is therefore on printing and communication papers, with some impact on tissue products.

Over the last two years, fuelled by a mix of currency depreciation and higher pulp prices, imported paper prices rose, on average, for the first time in close to a decade. Pulp prices have fallen and prices are again under pressure.

M. ENMRONMENT [STABLE]

Pulp

An obvious strategic threat to the industry and its expansion prospects is the continuing opposition – purportedly on environmental grounds – to the domestic manufacture of pulp and paper products. This applies especially to major capital investments such as pulp mills.

Paper

Its biological basis, renewability and recyclability make paper and board the solution to many environmental challenges. With high recovery rates and extensive recycling, Australia remains reasonably well positioned compared with some other jurisdictions and materials. Despite this, it faces continued challenges to its sustainability, Most recently, the necessity to ensure that paper and board is recovered and recycled locally has allowed the industry to demonstrate the extent of its recycling supply chain, as well as seek support for further enhancements.

Water, energy and emissions considerations are also significant and require constant attention from the industry as it works to maintain its social licence.

N. FREE TRADE [STABLE]

Australia has free trade agreements with the USA, ASEAN, Korea, China and Japan among others. There is significant threat in these agreements, at least for paper and paperboard manufacturers (as opposed to importers) in that they eliminate duty of at least 5%, in the case of China with no reciprocal rights and anti-dumping actions will become more difficult to pursue.

However, the risks of a significant trade dispute between the largest economies in the world – the USA and China – crystalised in early 2018 and though resolved between them in early 2020, now run the risk of freezing Australian production out of its major market: China, in favour of US supplies.

AUSTRALASIAN MANUFACTURING LOCATIONS & CAPACITIES

The pulp and paper-manufacturing base in Australia and New Zealand consists of only a few companies. The details here include all primary manufacturing locations, but not all the converters, (of which, in some sectors, there is a relatively large number) some of whom are very small and represent very slight volumes.

ABC TISSUE

ABC Tissue began importing tissue products in 1985, commencing converting operations at Wetherill Park, Sydney, in 1987. The company is owned and operated by the Ngai family. Its major brand is Quilton.

The acquisition of Cosco Holdings in Brisbane in July 2002 expanded ABC Tissue into manufacturing. Cosco Holdings was renamed Queensland Tissue. It supplies tissue stock, manufactured from de-inked pulp, to ABC Tissue converting operations in Sydney and Queensland. There are two tissue machines at Queensland Tissue, with a current combined capacity of 25 kt per annum.

ABC Tissue has two tissue machines at its Sydney headquarters. PM1 was installed in 2007 (30 ktpa) and PM2 in 2017 (35 ktpa).

The strategic challenge for ABC Tissue is how to maintain its dominant market share. The company has broad strategic options that are understood to include increasing their primary production capacity in Sydney, or establishing new capacity, most likely in Melbourne.

ABCTISSUE MANUFACTURING LOCATIONS & CAPACITY (2020)

Source: IndustryEdge research

Location	Machine	Capacity (kt)	
	PM1	30	
Wetherill Park (NSW)	PM2	35	
	PM1		
Brisbane (Qld)	PM2	25	
	Total	90	

ASIA PULP AND PAPER (AND AFFILIATES)

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ASIA PULP AND PAPER MANUFACTURING LOCATIONS & CAPACITY (2020) Source: IndustryEdge research

Location	Machine	Capacity (ktpa)
	PM3	28
Box Hill (Victoria)	PM4	33
	Total	61

ASALEO CARE

Asaleo Care manufactures a range of tissue products at its facilities in New Zealand.

The company was listed on the Australian Stock Exchange and was established by an initial public offering in mid-2014. Essity (formerly Svenska Cellulose Aktibolieget [SCA]), retains a minority shareholding in Asaleo Care and holds a range of technology and brand and marketing agreements with the company.

In 2019, it sold its Australian consumer tissue business to Solaris Paper (the local entity of Asia Pulp & Paper). This included the Box Hill mill. Asaleo Care now manufactures tissue only in New Zealand, supplying the New Zealand consumer tissue market and the regional 'Away From Home' market. The latter involves manufacturing and distributing the Essity brand 'Tork'.

The company continues to own and operate the personal care facility at Springvale in Victoria, manufacturing feminine and incontinence hygiene products.

ASALEO CARE MANUFACTURING LOCATIONS & CAPACITY (2020)

Source: Asaleo Care and IndustryEdge research

Location	Machine	Capacity (ktpa)
	PM2	27
Kawerau (New Zealand)	PM3	32
	Total	59

ENCORE TISSUE

Encore Tissue manufactures approximately 25 kt per annum of tissue paper and products at its facility in Laverton, Victoria.

The Holckner family owns Encore Tissue. It entered the business in 1998, when it purchased the Norton Vale tissue plant at Albury (NSW). The facility had a capacity of only 5 kt per annum and was closed in 2003. In 2008, Encore purchased the assets and market share of Merino, a Queensland based tissue manufacturer.

Encore Tissue had already established converting operations in western Melbourne, where it has since finalised the relocation of a second-hand Over Meccanica machine from Italy. The capacity of the relocated machine is estimated to be 25 kt per annum, with a mixed furnish of virgin and recycled pulp.

The company appears to hold a relatively strong position supplying a relatively wide range of private label toilet tissue to the major Australian retailers. Its production accounts for around 10% of total Australian tissue sector capacity.

OPAL (NIPPON PAPER INDUSTRY)

Opal, owned by Nippon Paper Group, was formed by the 2020 merger of Australian Paper and Orora's fibre packaging business and is the second largest corrugated packaging manufacturer in the region. The businesses were, until 2000, largely integrated within Amcor.

The merged company emphasises its significant packaging and industrial paper assets and production, but retains an emphasis on the production of printing and communication papers.

For almost a decade until 2009, Australian Paper was the manufacturing division of a company called PaperlinX, which was the result of the 2000 demerger. At the time of the float to create PaperlinX, there were four mills in the group: Maryvale (Vic), Shoalhaven (NSW), Burnie (Tas) and Wesley Vale (Tas). After a sequence of closures, PaperlinX sold Australian Paper, including the Maryvale mill in Victoria, to Nippon Paper Industries in June 2009.

Throughout the period when they were separated, Australian Paper continued to supply Orora's fibre packaging business with paper and board manufactured at its Maryvale mill. Over the last two decades, the Maryvale mill has been recipient of investments in pulping and bleaching (2009) and in packaging (PM1) in 2005.

Opal Paper & Recycling also consists of a single mill, situated at Botany, in Sydney. Utilising approximately 600 ktpa of recovered paper, the one paper machine has a capacity of around 500 ktpa, all of which is recycled grades for corrugated packaging production.

While the re-merger to create Opal underscores the 'pivot to packaging' for Nippon Paper Industries' assets in Australia, the Maryvale mill continues to manufacture copy and office papers, including the Reflex copy brand. In late 2014 the mill commissioned a new deinking facility providing bleached chemical recovered paper for use in its extensive recycled range of products.

OPAL'S DIVISIONS

Source: Opal

Division	Focus
Opal Australian Paper	Virgin fibre packaging paper and board and office and copy paper production
Opal Paper & Recycling	Recycled fibre packaging paper and board production
Opal Converting Group	Carton, bag and other packaging conversion
Opal Fibre Packaging	Corrugated box conversion and supply - Australia
Opal Kiwi Packaging	Corrugated box conversion and supply – New Zealand
Opal Specialty Packaging	Sustainable and customised packaging solutions

OPAL AUSTRALIAN PAPER - MARYVALE MILL

Source: Opal

Machine	Grade	Capacity (ktpa)
PM1	Extensible/Sack	60
PM2	Wrapping/ packaging	30
PM3	White Paper	90
PM4	Kraftliner Board	230
PM5	White Paper	185
	Total	605
	Softwood	175
	Hardwood	160
Pulp	Neutral-Sulphite Semi Chemical (NSSC)	105
	Deinked	80
	Total	520

OPAL AUSTRALIAN PAPER - CONVERTING OPERATIONS

Source: Opal

Division	Location	Region
	Townsville, Rocklea, West End	Qld
	Smithfield, Revesby	NSW
	Scoresby, Brooklyn	Vic
Opal Fibre Packaging	Launceston	Tas
	Athol Park	SA
	Bibra Lake	WA
Opal Kiwi Packaging	Wellington, Auckland, Christchurch	NZ
	Zillmere	Qld
	Botany	NSW
	Moorabbin, West Heidelberg	Vic
Opal Converting Group	Regency Park	SA
	Revesby	NSW
	Keon Park	Vic
	Kewdale	WA

AUSTRALIA

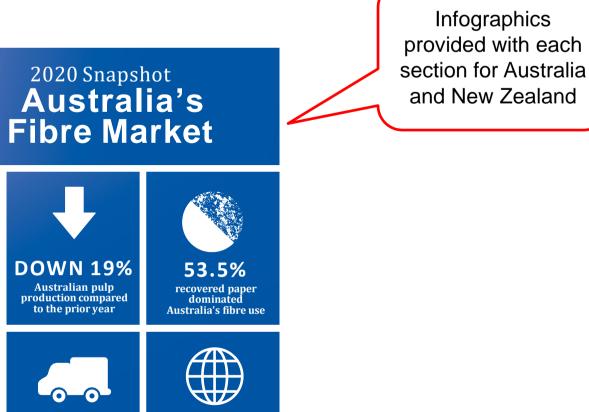
1.053 Mt

Recovered paper exports fall to 14 year low

123 kt

imports of bleached hardwood pulp at

record levels



Brazil (77 kt), New Zealand (62 kt) and Finland (31 kt) dominated pulp imports



Recovered

paper

use lifted to a

decadal high

VOL 2, CH 2 | FIBRE

The region's only fibre supplies, paper, board and paper product consumption model has been applied consistently for thirty years and is updated annually Australia's pulp manufacture is exclusively for internal supply and thus is entirely integrated into paper manufacturing. Australia remains a net importer of pulp, with negligible pulp exports.

Fibre Supply

Pulp & Recovered Fibre Consumption

The supply of the various grades of virgin fibre in Australia is set out in the following table. Recovered paper has been added to complete the 'fibre furnish' picture.

The Australian Fibre Furnish - Consumption of Virgin Pulp by Main Grade & Utilisation of Recovered Paper: 2010 – 2020 (ktpa)

Y/E JUNE	MECH/ CHEMI MECH	SEMI- Chem Sulf/Bi- Sulf	CHEMICAL	TOTAL VIRGI N FIBRE FURNI SH	DE- INKED PULP	IMPLIED RECOVER ED PAPER	TOTAL FIBRE FURNISH ¹
2010	360	53	1,112	1,525	-	1,900	3,425
2011	430	28	1,210	1,668	-	1,756	3,424
2012	410	7	1,239	1,656	-	1,719	3,375
2013	410	-	1,229	1,639	-	1,660	3,299
2014	410	-	1,264	1,674	-	1,621	3,295
2015	410	-	1,320	1,730	-	1,669	3,399
2016	440	-	1,286	1,726	22	1,745	3,493
2017	395	-	1,352	1,747	114	1,700	3,561
2018	367	-	1,388	1,755	121	1,668	3,544
2019							
2020			Ava	ailable to Subscr	ibers		
+/- % pa							

Detailed data tables breakdown all products to the most granular, while providing the total picture

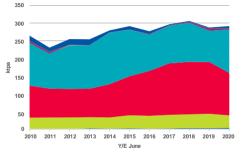
Visy's pulp mill developments at Tumut in New South Wales altered the pattern of recovered paper utilisation in Australia. The use of pulp increased, to the point where it has overtaken utilisation of recovered paper. This altered in 2019-20, but is likely to be a single-year event, arising from the closure by Norske Skog of its Albury newsprint mill and the subsequent reduction in pulp production, coupled with an implied increase in recovered paper utilization. We anticipate some inventory considerations also impacted the year. In 2019-20, virgin fibre accounted for 36% of the total fibre furnish, Deinked pulp for 36% and recovered paper for 36%. Consumption of recovered paper is calculated to have peaked at 16% kt in 2009-10. It subsequently declined but has plateaued since the middle of the decade.

Over the decade, the total virgin fibre furnish has grown at per annum, while recovered paper utilisation has declined per annum.

Imports

Australian Imports of Pulp by Grade: 2010 – 2020 (ktpa)

Y/E JUNE	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 2020	+/-% PA
Mechanical	0.4	0.4	0.6	2.3	1.8	2.5	1.8	2.1	3.0		24.9%
Unbleached Softwood Kraft	32.5	32.8	33.0	31.7	31.6	37.1	36.3	38.8	39.4		0.9%
Bleached Softwood Kraft	90.5	81.6	80.3	80.5	93.8	109.9	126.7	145.5	148.1		2.9%
Bleached Eucalypt Kraft	120.3	99.5	122.8	122.3	145.3	131.4	102.3	105.8	110.7	Available to Subscribers	0.2%
Bleached Softwood Sulphite	0.2	-	1.1	-	-	-	-	-	-		-
Bleached Hardwood Kraft	5.7	4.7	0.6	0.7	0.7	0.6	1.7	1.1	3.1		-6.5%
Semi Chemical*	14.8	11.6	16.4	16.6	5.9	9.8	8.0	3.0	1.6		-8.0%
Total	264.4	230.6	254.8	254.0	279.0	291.4	276.7	296.3	305.9		1.0%



SEMI CHEMICAL INC RECOVERED & BAMBOO BLEACHED HARDWOOD KRAFT BLEACHED SOFTWOOD SULPHATE BLEACHED SOFTWOOD KRAFT UNBLEACHED SOFTWOOD KRAFT UNBLEACHED SOFTWOOD KRAFT MECHANICAL

Source: ABS & IndustryEdge estimates * inc Recovered & Bamboo

A decade of data, assembled, measured, tested and reported by the only dedicate, independent analysts in the industry Demand for P&C papers, including Newsprint, remains driven by advertising and marketing, at least in general. The long-term data in Volume One of the 2020 Strategic Review demonstrates that advertising continues its rapid migration from print to other forms of media, especially online and other forms of electronic and digital advertising.

Apparent Consumption

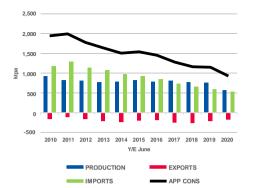
In 2019-20, total P&C paper demand declined by 222.7 kt, or the prior year's comparatively modest fall of 1.2%. The main driver for the fall in consumption was newsprint, as this volume of the Strategic Review will demonstrate. However, no grade was spared the consumption pain. at the start of the decade, amounting to million tonnes less consumption. Additionally, there has been substitution away from some grades, and resurgence in demand for others, as consumption patterns have changed.

The following table and chart show apparent consumption of P&C papers over the last decade.

Apparent consumption has ended the decade % lower than

Australian Apparent Consumption of Printing & Communication Papers, Including Newsprint: 2010 – 2020 (ktpa)

Y/E JUNE	PRODUCTION	EXPORTS	LOCAL SALES	IMPORTS	APP CONS
2010	923	150.6	772.4	1172.9	1,945.3
2011	816	103.8	712.2	1284.8	1,997.0
2012	808	163.0	645	1135.4	1,780.4
2013	777	211.3	565.7	1076.3	1,642.0
2014	780	237.8	542.2	966.9	1,509.1
2015	816	197.3	618.7	922.7	1,541.4
2016	789	177.7	611.3	843	1,454.3
2017	803	247.7	555.3	725.8	1,281.1
2018	770	258.3	511.7	652.5	1,164.2
2019					
2020					
+/- % pa	-4.7%	1.2%	-6.4%	-7.7%	-7.1%



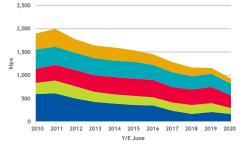
Source: ABS & IndustryEdge research and estimates

Mechanical vs Woodfree Grades

The following table and chart distinguish the Printing and Communication papers' market between share the Mechanical and Woodfree paper grades.

Australian Apparent Consumption of Printing & Communication Papers by Grade: 2	010 -
2020 (ktpa)	

Y/E JUNE	NEWSPRINT	UCM	СМ	TOTAL MECHANICAL	%	UCWF	CWF	TOTAL WOODFREE	%	TOTAL
2010	595.2	241.6	305.7	1,142.5	60.2%	411.8	342.8	754.6	39.8%	1,897.1
2011	609.2	275.1	338.2	1,222.5	61.2%	390.8	384.8	775.6	38.8%	1,998.1
2012	500.3	263.8	352.4	1,116.5	62.7%	367.5	295.6	663.1	37.3%	1,779.6
2013	424.6	218.5	355.8	998.9	60.8%	368.2	274.6	642.8	39.2%	1,641.7
2014	390.0	199.8	374.5	964.3	60.4%	348.4	284.6	633	39.6%	1,597.3
2015	359.8	195.8	373.8	929.4	60.4%	362.9	245.5	608.4	39.6%	1,537.8
2016	349.5	175.7	376.7	901.9	62.1%	320.2	230.7	550.9	37.9%	1,452.8
2017	233.2	178.3	332.4	743.9	58.0%	321.1	218.3	539.4	42.0%	1,283.3
2018	166.0	192.3	334.5	692.8	59.5%	287.6	184.8	472.4	40.5%	1,165.2
2019										
2020	-			Avai	lable to S	ubscribers	6			
+/-% pa	-12.0%	-6.3%	-1.2%	-6.8%		-4.6%	-10.8%	-6.9%		-6.9%



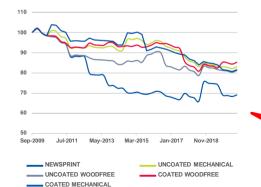
■NEWSPRINT ■UCM ■CM ■UCWF ■CWF

Source: ABS & IndustryEdge research and estimates

The 'Woodfree' grades of Printing & Communication papers, so called because they are manufactured from chemical pulp where the wood has been broken down to raw cellulose, experienced a combined consumption decline of 6.9% per annum over the decade. In 2019-20, consumption fell 10.4% as demand for CWF grades appeared to fall dramatically. The details of this grade tell a different story, set out later in this volume. Consumption of 'Mechanical' grades had moved through a relatively narrow range over most of the last decade, until 2019-20. The 24.6% decline in consumption for the year sees grades made from predominantly mechanical pulp fall at a pace almost exactly the same as the woodfree grades over the decade.

Ultimately, the comparison table and chart show that no grade was spared over the decade, or the most recent year.

Australian Comparison of Prices of the Main P&C Grades: SQ'09 – JQ'20 Index (Base: SQ'09 = 100)



Source: ABS & IndustryEdge estimates and research

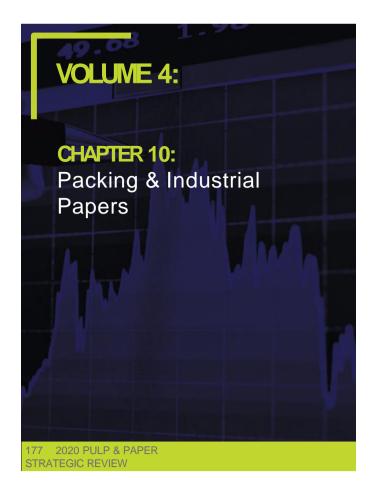
In real terms (measured against movements in the Producer Price Index), average import prices for the main grades of P&C papers performed differently to one another in 2019-20. Average newsprint prices fell 6.6%, CM grades by 2.7%, UCWF grades by 0.5% and UCM grades by 0.1%. CWF grades stood paper, recording a 3.4% average price increase over the year.

As the index shows, compared with a decade earlier, import prices lag the normative cost of production by as little as 15% (CWF grades) and as much as 31% (newsprint) lower than a decade ago.

Pricing for imports of P&C grades make little sense. Most grades are relatively expensive to manufacture and input costs continue to rise. The only consistent explanation for failing prices while input costs are increasing is that importers pursued volume and market share, at the expense of price. This has been arrested, to some extent, over the last two years.

The 'supply at any cost' era appears to have ended.

Price data provided in tables and charts in real terms and comparative between similar products, and by country

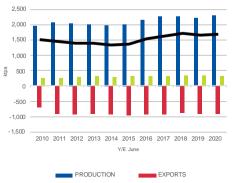


Apparent Consumption

In 2019-20, to increase transparency of total production and consumption, IndustryEdge has ceased removing plasterboard liner production from 'Sales to Local Market' and 'Apparent Consumption' data. The entire data series now includes plasterboard liner.

Australian Apparent Consumption of Packaging & Industrial Paper: 2010 - 2020 (ktpa)

Y/E JUNE	PRODUCTION	EXPORTS	LOCAL SALES	IMPORTS	APP CONS
2010	1,963	711.0	1,248.1	250.9	1,502.3
2011	2,081	904.1	1,174.2	272.4	1,443.5
2012	2,049	941.6	1,106.8	277.7	1,387.8
2013	2,015	909.4	1,106.0	306.5	1,404.6
2014	1,991	944.3	1,046.7	288.4	1,338.0
2015	2,023	953.2	1,069.8	322.7	1,367.1
2016	2,145	926.3	1,210.7	321.6	1,532.2
2017	2,266	942.3	1,321.0	313.2	1,634.0
2018	2,264	876.3	1,383.4	335.3	1,718.7
2019					1,661.1
2020		Available to	Subscribers		1,695.5
+/- % pa	1.6%	2.6%	1.0%	2.3%	1.2%



IMPORTS APP CONS

Source: ABS & IndustryEdge research and estimates

Apparent consumption of Packaging & Industrial (P&I) papers is calculated to have risen 2.1% in 2019-20. Over the decade, apparent consumption has risen 1.2% per annum, but over the last five years, it has expanded at a more robust 4.4% per annum. Consumption sits below the record set in 2017-18.

Despite the consumption growth, the most recent year saw consumption be suppressed by the long tail of a lingering drought

(reduced food exports) and the extensive bushfire season, which disrupted some production of P&I papers.

185 | 2020 PULP & PAPER STRATEGIC REVIEW It is important to place what is generally quite consistent apparent Each of these factors impacts upon apparent consumption of P&I consumption growth, in its proper context. Factors that impact on the sector include:

- Rise of e-commerce and household deliveries, requiring increased volumes of containerboard:
- Climatic conditions negatively impacting primary production through several years in the decade:
- Australia's changing beverage consumption patterns:
- Domestic manufacturing of some grades of P&I paper (most notably Cartonboard) having ceased:
- Intermediate transfers of goods within the domestic economy having declined:
- Reduced output growth from the eastern states;
- Strategies to use less resources resulting in 'lightweighting' of packaging materials deliver more packaging surface area per tonne of production:
- Increased influence of secondary fibre packaging products such as moulded fibre;
- Imports of pre-converted packaging materials rising.

paper and paperboard in different ways.

The fall in production and therefore of apparent consumption until 2015-16, is directly attributable to the closure by Amcor of its cartonboard manufacturing mill at Petrie in Queensland, Some new imports appear to have been classified as coated woodfree and coated mechanical printing and communication papers.

The second factor impacting apparent consumption for packaging substrates is the increased importation of pre-converted packaging material, which were just below record levels in 2019-20. Coupled with this is the rise in e-commerce and the impact that has on containerboard supplies, especially for delivery to households.

Over the last decade, production has increased at an average rate of per annum, ahead of apparent consumption, over the same period. At kt in 2019-20, production reached a new peak.

Exports have risen at an average rate of per annum, while the average rate of increase for imports over the decade is 2.3% per annum.

By Grade

Estimated apparent consumption for packaging paper and board by grade are set out in the table below.

Australian Packaging & Industrial Market Estimated Grade Breakdown: 2010 - 2020 (ktpa)

Y/E JUNE	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Kraftliner	401	397	370	381	382	415	477	504	533		
Multiply/Test Liner	419	409	404	393	396	406	455	485	543		
Corrugating Medium	282	237	223	228	235	246	303	342	319		
Container Materials	1,102	1,043	998	1,002	1,014	1,067	1,235	1,331	1,395		
Coated Packaging Paper & Board	190	134	187	198	134	134	127	167	146		
Sack Kraft	53	52	44	35	22	20	23	27	27		
Other Kraft Paper & Board	54	57	57	64	58	48	45	46	49		
Plasterboard Liner	66	64	65	70	65	80	82	82	82		
Other Uncoated Paper & Board	12	12	26	10	12	12	12	11	11		
Other Paper & Board (4806, 4807, 4808)	26	23	24	23	21	20	20	16	16		
Total	1,503	1,385	1,400	1,402	1,325	1,381	1,544	1,680	1,726		

Source: ABS & IndustryEdge research and estimates *Rounding applies

The proportion of P&I grades represented by Container Materials (primarily used to manufacture corrugated boxes) has remained above 70% for most of the last decade. It is growing rapidly as a proportion of total P&I paper consumption. Container materials accounted for a record 82.4% of the total in 2019-20.

Coated Packaging Paper & Paperboard demand (supplied wholly by imports) rose marginally to total the form the perior will, import volumes have always been less than anticipated, with the industry generally considering there were significant misclassifications occurring in the market from time to time.

Over the decade, consumption of Container Materials has grown an average 3% per annum. However, over the last five years, it has grown at an average rate of 3% per annum.

Apparent consumption of Sack Kraft declined to kt, a mildly surprising result that may have something to do with inventory movements. Other Uncoated Paper and Paperboard was also stable at just to t.

Australian Packaging & Industrial Market Estimated Breakdown by Grade & Provenance: 2019-20 (ktpa)

GRADE	PRODUC TION FOR LOCAL CONSUMPTION	IMPORTS	TOTAL	
Container materials, of which:				
Kraftliner				
Multiply Liner & Whitetop Liner				
Corrugating Medium	-			
Sub-total Container Materials				
Coated Packaging Paper & Board	-			
Sack Kraft		Available to Subscribers		
Other Kraft Paper & Board	-			
Plasterboard Liner				
Other Uncoated Paper & Board	-			
Other Paper & Board*				
Sub-total - Other	-			
Total	1,381.3	314.2	1,695.5	
Source: ABC & IndustryEdge research and estimates				

Source: ABS & IndustryEdge research and estimates

*4806 - Vegetable parchments etc., 4807 - Composite paper & paperboard, 4808 - Paper & Paperboard corrugated, creped, crinkled, embossed etc.

In aggregate, domestic production accounted for p&I paper consumption in Australia in 2019-20, dominated by self-sufficiency in Container Materials.

Container materials include Kraftliner board, Testliner/Multi-ply, Whitetop Liner and Corrugating Medium (including semi-chemical fluting). Local supply for these grades totalled **total board**kt, accounting for **board** % of total local sales.

Imports of Container Materials (almost all from New Zealand and

South Africa) accounted for just % of total consumption, with most other grades seeing imports hold a more significant market share.

An estimate of kt of Plasterboard liner has been shown separately from Other Uncoated Paper and Board. Demand for Plasterboard liner is driven by the housing sector. Supply of this grade is almost entirely from local production, mostly by Visy, with imports negligible and unable to be distinguished. Australia's 'go to' reference for packaging and industrial paper and board consumption. Relied upon by Government, producers, importers,buyers, investors and traders New Zealand remains the dominant source of Kraftliner imports, accounting for up to 95% of shipments in some years. In 2019-20, shipments across the Tasman were stable at $\frac{1}{2}$ k and made up $\frac{1}{2}$ % of total imports. These are supplies that are primarily destined for Oji Fibre Solutions box converting plants in Melbourne, Sydney and Brisbane (a new facility), as well as to some small independent operations.

Small and growing volumes continued to arrive from South Africa, reaching tk during 2019-20. Most of this is special grades, including bleached linerboards.

Shipments from China in the middle of the decade are not likely to have been virgin Kraftliner.

Price by Country of Origin

The following table and chart show weighted average import prices by country over the decade.

Australian Imports of Kraftliner Board by Country of Origin: 2010 - 2020 (AUDFob/t)

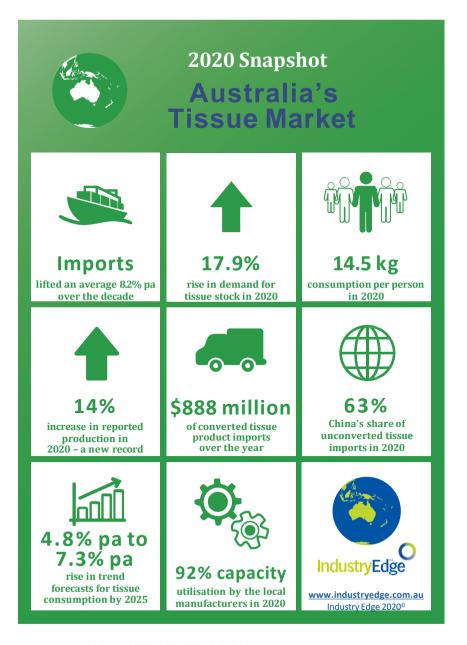
Y/E JUNE	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
New Zealand	697	696	679	687	679	695	710	720	751	767	737
South Africa	1,144	884	847	762	815	839	938	904	913	1,105	1,079
USA	736	955	525	496	566	897	1,439	1,410	1,048	976	1,191
Wtd Average	707	704	679	686	700	727	742	743	778	849	825



Source: ABS & IndustryEdge estimates

The Weighted Average price of Kraftliner imports peaked in 2018-19 at AUDFob849/t, settling back a little to AUDFob825/t in 2019-20, as pulp prices moderated. There is a clear price differential between the main supplier New Zealand, and the specialty provider, South Africa.

200 | 2020 PULP & PAPER STRATEGIC REVIEW Product by product analysis with absolute clarity on key aspects of the global and local paper and board markets



Manufacturing capacity

The following table sets out IndustryEdge estimates of total capacity in the tissue sector by producer for 2018-19. It should be noted that these are machine production capacities, not market shares.

Tissue Machine Capacity in Australia & Australasia: 2019 - 20 (ktpa & %)

COMPANY	AUSTRALIA (KTPA)	%	AUSTRALASIA (KTPA)	%			
KCA							
ABC Tissue							
Sorbent Paper Company	_	Available	Available to Subscribers				
Asaleo Care		/ wandon					
Encore Tissue							
Total							

Source: IndustryEdge research & estimates

When ABC Tissue completes its stated expansion plans, total capacity in Australia would rise to as much as 305 kt per annum, well in excess of local consumption.

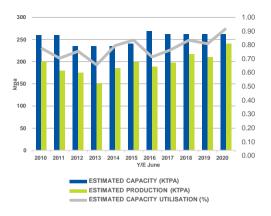
Should that arise, production would be significantly ahead of implied consumption and although some exports are likely and growth is possible, the greater likelihood is that one or other of the established producers will reduce its production capacity.

Utilisation

The following table sets out estimated levels of capacity utilisation.

Tissue Manufacturing Capacity Utilisation in Australia: 2010 - 2020 (ktpa & %)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimated Capacity (ktpa)	260	260	235	235	235	240	269	262	262		
Estimated Production (ktpa)	200	180	175	151	185	199	189	198	217		
Estimated Capacity Utilisation (%)	77%	69%	74%	64%	79%	83%	70%	76%	83%		



Source: IndustryEdge research & estimates

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