## 2018 National Pulp & Paper Sustainability Report

Good for the environment, people & Australia





Australia's paper and paperboard manufacturing industry continued its role as a global sustainability leader in 2018.

The industry is committed to improving its sustainability and to communicating its progress on the sustainability journey to its stakeholders.

Members of the Australian Forest Products Association (AFPA) either improved their sustainability performance in 2018, or maintained it, where performance is already at global best practice levels.

This report, compiled and verified independently, addresses five key measures of sustainability, covering resource utilization, recycling, energy efficiency, employment in regional Australia and import replacement. It does so using verifiable and consistent data and with methodologies that meet Australian and international standards.

<sup>®</sup>Australian Forest Products Association (AFPA), 2018 www.ausfpa.com.au

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This report was compiled using data from the 2017 calendar year and the 2017-18 financial year.

AFPA and its members and consultants exercised due care and responsibility in compiling the report. However, no liability can or will be accepted for decisions taken on the basis of its contents.





The report was researched and prepared by independent pulp and paper industry consultants, IndustryEdge.



**Paper and paper products are everywhere!** From notepads, copy paper and newsprint to massive volumes of corrugated boxes and other packaging, all the way to personal hygiene products like tissues and hand towels, paper plays a fundamental role in modern life.



In Australia, local production of paper and paperboard was a substantial 3.251 million tonnes in 2017-18<sup>1</sup>. Production is centred around regional Australia, supporting 18,200 direct jobs<sup>2</sup> and more than three times that many across the economy. The sector earned AUD1.086 billion of export income, displacing imports estimated to be valued at more than AUD4.5 billion<sup>3</sup>.

As the industry continues to grow to meet Australia's demand for paper and paper products, it continues to recover and recycle ever-larger volumes of fibre resources. In 2016-17, recycling<sup>4</sup> accounted for 3.059 million tonnes of paper and paperboard<sup>5</sup>.

To grow its role in Australia's economy, supplying a growing population with the products it needs now, and into the future, the pulp and paper industry needs to expand. From an estimated AUD8 billion in total investment in 2018<sup>6</sup>, total investment needs to grow by as much as 20% over the next five years, to increase domestic supply, replace imports and employ more people in regional Australia.

Australia's pulp and paper manufacturing industry is one of the most advanced manufacturing sectors of the Australian economy. Its technological sophistication, extent of investment and potential to contribute to the emerging bio-economy and add value to its own circular economy is almost without peer.



While increasing production and recycling, the industry has continued to improve its environmental performance. Since 2014-15, direct emissions of greenhouse gases have been reduced by 5.1% (equivalent to 29,192 cars) and energy intensity fell by 5.3% (equivalent to the energy required to power 122,252 houses).

To support the further development of the sustainable pulp and paper industry in Australia, AFPA and its members have called for one billion new production trees located near major processing facilities, and for substantial investment in a National Biofutures Industry Development Fund and Bioproducts Innovation Hub<sup>7</sup>. Increasing fibre available to manufacture paper and paperboard is key to ensuring a reliable and continuous supply of high-quality, domestic products, with all the co-benefits that delivers.

This report, prepared independently and presented in precise and clear formats, demonstrates that the pulp and paper industry is a sustainable and continuously improving industry of regional importance and national significance.

It is an industry of which Australia and Australians can rightly be proud.

<sup>&</sup>lt;sup>1</sup> IndustryEdge, 'Pulp & Paper Strategic Review, 2018'

<sup>&</sup>lt;sup>2</sup>ABARES, Forest & Wood Products Statistics, December 2017

<sup>&</sup>lt;sup>3</sup>IndustryEdge, based on import parity pricing

<sup>&</sup>lt;sup>4</sup> Includes exported volume

<sup>&</sup>lt;sup>5</sup>Volume includes packaging imported with goods and some contaminated material

<sup>&</sup>lt;sup>6</sup> IndustryEdge, 'Pulp & Paper Strategic Review, 2018'

<sup>&</sup>lt;sup>7</sup> AFPA, 'Towards a National Forest Industries Plan: Key Industry Asks', 2018

## Australia's sustainable pulp & paper industry



## Best Practice Wood Fibre Sustainability

#### Uses more than 95% certified wood fibre

Combined, more than 24.9 million hectares of Australia's 38.6 million hectares of potential production forests and plantations<sup>8</sup> are independently certified by third party organisations. Analysis of publicly available data shows that 100% of plantations and all publicly owned production forests are certified<sup>9,10</sup>.

Nearly all fibre sourced from Australia's plantations and forests is extensively certified by either the Australian Forestry Standard (AFS), which is an endorsed scheme of the Program for Endorsement of Forest Certification schemes (PEFC) or Forest Stewardship Council (FSC), and in some cases both. The exception is small quantities of material sourced from private owners.

#### Fourth largest area of certified forests and plantations

As the table below shows, Australia has the third largest area of certified forests and plantations<sup>11</sup> in the world. Much more heavily forested countries fall far behind on this measure.

#### ALL Australian made pulp is independently certified

All the virgin fibre pulp made in Australia and used to manufacture paper and paperboard is certified by either the AFS/PEFC or FSC. In addition, almost all – and in some years it may be all – of Australia's pulp imports are also independently certified.

Rank	Country	PEFC	FSC	Total
1	Canada	138,148,267	55,205,377	193,353,644
2	<b>Russian Federation</b>	13,180,950	41,913,942	55,094,892
3	USA	33,748,412	13,682,304	47,430,716
4	Australia	23,656,585	1,210,543	24,867,128
5	Sweden	11,549,700	12,255,794	23,805,494
6	Finland	17,784,457	1,478,032	19,262,489
7	Belarus	8,710,234	8,281,505	16,991,739
8	Poland	7,252,197	6,936,266	14,188,463
9	Norway	7,380,750	444,654	7,825,404
10	Brazil	3,590,968	6,316,664	9,907,632
11	Germany	7,424,185	1,156,053	8,580,238
12	France	8,096,117	43,423	8,139,540
13	China	5,759,691	985,822	6,745,513
14	Indonesia	3,662,517	3,078,285	6,740,802
15	Malaysia	4,120,139	755,404	4,875,543
16	Chile	1,908,712	2,279,928	4,188,640
17	United Kingdom	1,409,761	1,619,519	3,029,280
18	New Zealand	434,185	1,270,778	1,704,963

Source: FSC<sup>12</sup>, PEFC<sup>13</sup> \* total includes volume certified by both PEFC and FSC

<sup>8</sup> ABARES 'Australia's forests at a glance 2015'

<sup>9</sup> ABARES 'Australia's forests at a glance 2015'

<sup>10</sup> The remaining potential production forests are owned by private land-owners who are generally not currently involved in forestry activities. <sup>11</sup> This measure includes forests and plantations that are 'dual certified' to both the major international schemes.

<sup>12</sup> FSC 'Facts & Figures – December 2017'

<sup>13</sup> PEFC 'Annual Review, 2017'

## Global Best Practice Recycling

#### Recycles 69.6% of paper and paperboard

Australia's implied recycling rate for all paper and paperboard in 2017-18 was 69.6%, having declined marginally (0.7%), due to apparent stockpiling of some grades of recovered paper and the rapid growth in pre-packaged goods purchased through e-commerce transactions.

Over the year, Australia's total consumption of paper, paperboard and paper products was estimated to be 4.799 million tonnes, not all of which is available for recycling. IndustryEdge reports that for the year-ended June 2018, fibre recovery totaled 3.058 million tonnes, consisting of local utilization of 1.667 million tonnes and exports totaling 1.391 million tonnes<sup>14</sup>.

By comparison with Australia's 69.6% recycling rate, in Europe<sup>15</sup> in 2017, the total recycling rate for paper and paperboard rose marginally to 72.3% of consumption<sup>16</sup>. In the same year, the recovery rate in the US declined in a manner similar to Australia's, slipping back to 65.8%<sup>17</sup>.

	2015-16	2016-17	2017-18
Consumption (kt)*	4,618	4,683	4,799
Recovery (kt)	3,142	3,019	3,058
Recovery (%)	73.6%	70.3%	69.6%



Source: ABS, IndustryEdge research, analysis and estimates \* includes estimated packaging and industrial paper imported as packaging on goods



Recycling rates are measured for some specific types of paper.

In calendar year 2017, Australia's newsprint recycling rate was 75.4%<sup>18</sup>, compared with 72.8% in the USA<sup>19</sup>.

76.6% of paper based packaging material is recycled.

Australia's packaging and industrial paper recovery rate (think of corrugated boxes, cereal boxes and the like) was calculated to be 76.6%<sup>20</sup> in 2017-18, after accounting for nonrecyclable material. This compares with 73.7% in Europe<sup>21</sup>.

Australia's recovery and recycling of paper and paperboard has increased dramatically over the last ten to fifteen years. Australia's strong position has been made possible because of increasing recovery rates, both from kerbside collections and from commercial and industrial sources and because of significant industry investments in paper recycling capacity.

Recent trade challenges for exported recovered paper supplies demonstrate that industry, government at all levels, and the community need to constantly consider opportunities to advance towards a circular economy, in which recovery and recycling of scarce and valuable fibre resources is designed into industrial processes and supply chains.

<sup>14</sup> IndustryEdge, 'Pulp & Paper Strategic Review, 2018' www.industryedge.com.au

- <sup>15</sup> Europe means the EU28 nations plus Norway and Switzerland
- <sup>16</sup> CEPI, 'Key Statistics 2017', www.cepi.org
- <sup>17</sup> Paper Recycles, 'Paper & Paperboard Recovery' http://www.paperrecycles.org

- <sup>18</sup> NewsMediaWorks, 'Old Newsprint Recovery Figures for 2017'
- <sup>19</sup> Paper Recycles, 'Paper & Paperboard Recovery' http://www.paperrecycles.org
- <sup>20</sup> IndustryEdge, 'Pulp & Paper Edge, September 2018'
- <sup>21</sup> CEPI, 'Key Statistics 2017', www.cepi.org



## Leading the circular economy means taking action to reduce waste, until the zero landfill target is achieved.

'Towards Zero Landfill' remains an important objective for Australian Paper's Maryvale Mill. The Mill has been established in the Latrobe Valley for 80 years and is one of the region's largest employers.

As an integrated pulp and paper manufacturer, Australian Paper Maryvale's operations generate organic materials that can't be used to manufacture paper. As part of its commitment to developing a circular economy, Australian Paper continues to explore new options for this material, progressively reducing landfill.

Ongoing work – over more than a decade – has seen a dramatic reduction in the volume of solid waste being sent to Maryvale's onsite landfill. As a result of a partnership with local

business PineGro, in 2017 nearly 130,000 m<sup>3</sup> of Maryvale's organic waste material was recycled into valuable agricultural products used for composting and soil remediation.

Australian Paper has also successfully eliminated unburnt lime particles from its waste stream. This material is now transformed into high quality soil conditioner used in the agricultural industry. This waste type previously accounted for more than 2,000 m<sup>3</sup> per annum of landfill.

Maryvale Mill's 2017 goal was to reduce waste being sent to onsite landfill to a total of 8,000 m<sup>3</sup>. This target was exceeded by almost 18%, with a total of just 6,570 m<sup>3</sup> being sent to its landfill.

## Continuous Improvement Energy Efficiency and Emissions

### 5.1% reduction in direct emissions – equivalent to 29,192 less cars on the road

The Australian paper industry reduced its direct emissions<sup>22</sup> by 5.1% from 2014-15 to 2016-17<sup>23</sup>. Over the same period, the net energy used by the industry declined 0.1%. Industry investment in reducing emissions was equivalent to removing 29,192 cars from Australia's roads<sup>24,25</sup>.

#### 5.4% reduction in energy intensity – equivalent to 122,252 houses

Australia's production of paper and paperboard rose by a reported 210,000 tonnes<sup>26</sup>, or 5.4% from 2014 -15 to 2016 -17. Total energy use rose by a very small 1.6% over the two years, while energy intensity fell by 5.3%<sup>27</sup>.

That means that the pulp and paper industry saved energy equivalent to the electricity used to power 122,252 houses while increasing its production<sup>28</sup>.

#### Energy use and emissions are falling every year



- <sup>22</sup> Direct emissions are reported under 'Scope 1' of the National Greenhouse and Energy Reporting scheme. For further information on NGER go to www.cleanenergyregulator.gov.au/NGER
- <sup>23</sup> NGER, 'Corporate emissions and energy data from 2014-15 to 2016-17'

<sup>24</sup> National Transport Commission, 'Light vehicle emissions', https://www.ntc.gov.au/roads/environment/light-vehicle-emissions/

- <sup>25</sup> ABS, '9208.0 Survey of Motor Vehicle Use, Australia, 2017' http://www.abs.gov.au/ausstats/abs@.nsf/mf/9208.0/
- <sup>26</sup> IndustryEdge, 'Pulp & Paper Strategic Review, 2017' www.industryedge.com.au

- <sup>27</sup> This energy intensity measure was calculated by dividing 'net energy consumption' data reported under the NGER scheme with paper and paperboard production data assembled annually and reported by IndustryEdge. The 2016-17 data was compared with the 2015-16 data
- <sup>28</sup> Australian Energy Regulator, 'Electricity bill benchmarks for residential customers' March 2015 https://www.aer.gov.au/system/files/ACIL%20 Allen\_%20Electricity%20Benchmarks\_final%20report%20v2%20-%20 Revised%20March%202015.PDF



Less emissions means better air. *Source: Norske Skog Australasia* 

### Case Study Paper mill takes equivalent of 14,000 cars off the road

## Emissions reduction driven by significant investment, using second-hand equipment.

Catalogue, brochure, magazine and newsprint production results in 20% less direct CO<sup>2</sup> *e* emissions, thanks to a major investment at Norske Skog's Boyer Mill in Tasmania.

A new system, designed on site, integrated to existing operations and built using second-hand equipment sourced from the international market, recovers heat, converts it to steam and reuses it to reduce CO<sup>2</sup> e emissions across the mill.

The steam is used to help dry paper. Using recovered heat means the Boyer mill now uses significantly less coal to generate new heat and steam. The result is lower emissions and reduced energy costs.

The initiative, one of the earliest industrial processes supported through the Emissions Reduction Fund (ERF) removes an estimated 37,000 tonnes of CO<sup>2</sup> e from the atmosphere, every year.

To put the emissions' reduction into context, that equates to 14,846 standard vehicles removed from the roads, each and every year.

The reduced use of coal also improves the Boyer mill's overall energy costs, helping them remain viable in a globally competitive market.

### Delivering baseload energy from renewable biomass

Several of Australia's pulp and paper mills produce baseload (continuous supply) electricity, as well as thermal heat, from renewable, biomass energy.

In 2016-17, bioenergy supplied 10% of Australia's renewable electricity<sup>29</sup>, but is the key source of renewables able to deliver baseload. The sector continues to examine opportunities to develop its delivery of baseload electricity to the grid, potentially accessing the AUD100 million Australian Bioenergy Fund <sup>30</sup>.

<sup>29</sup> Department of the Environment & Energy, 'Australian Energy Update 2017'

<sup>30</sup> Clean Energy Finance Corporation https://www.cleanenergyfinancecorp.com.au/media/158193/cefc-factsheet\_australian-bioenergy-fund\_lr.pdf

### Case Study Energy from waste closer to reality

## Engaged community delivers on emissions reducing energy generation.

Australian Paper's Maryvale Mill is the largest generator of baseload renewable energy in Victoria; meeting 51% of its energy needs. The Mill is also the biggest industrial user of natural gas in Victoria, and a significant electricity consumer.

Australian Paper is committed to addressing its future energy needs proactively, and in 2017, announced a \$7.5 million feasibility study into a \$600 million Energy from Waste (EfW) facility at the Maryvale Mill, supported by the Australian and Victorian governments.

This EfW facility would divert approximately 650,000 tonnes of residual waste household from Gippsland and Melbourne landfills each year, saving approximately 550,000 tonnes of carbon emissions annually. It would also support more than 1,600 Victorian full-time equivalent jobs during construction, and over 440 ongoing, including flow-on impacts.

The EfW process creates thermal energy, ideal for pulp and paper manufacturing where large quantities of steam are

required. The facility would generate 225 Megawatts of thermal energy at an estimated 58% efficiency based on Combined Heat and Power (CHP) output.

The feasibility study will examine the environmental, social, technical and commercial feasibility of building an EfW facility at Maryvale. South-East Melbourne faces significant landfill shortages with around 750,000 tonnes of annual landfill capacity set to close over the next five years. EfW is proven, low emissions technology with more than 500 similar operations in Europe and is a missing link in Victoria's waste heirarchy.

As a major part of the study, Australian Paper established a project information office in the centre of Morwell to engage with the local community.

As the study continues throughout 2018, the community remains involved. The plant could be constructed and operational within 5 years.

## Community & Economic Contribution



#### **Regional Employment**

#### Contributes up to 60,820 full time jobs in Australia

In June 2017, approximately 18,200 people were directly employed in Australia's pulp, paper and paper products industry<sup>31,32</sup>. Based on an independent socio-economic assessment<sup>33</sup>, it has been estimated that nationally, up to 60,820 jobs are sustained by the industry, more than half of which are in regional Australia.

#### Annual Trade



#### Exports valued at AUD1.086 billion in 2017-18

In 2017-18, Australia imports of paper for printing and writing, advertising, packaging and personal care were valued at AUD2.757 billion. Its exports of the same products were valued at AUD1.086 billion, representing a balance of trade deficit of almost AUD1.671 billion<sup>34</sup>. The deficit was 2.4% lower than for the prior year.



#### Local production replaces estimated AUD4.5 billion in imports

Supporting Australia's economy, each year, the local pulp and paper manufacturing industry's annual production replaces imports whose estimated value is greater than AUD4.5 billion<sup>35</sup>.

<sup>&</sup>lt;sup>31</sup> ABARES, Australian Forest & Wood Products Statistics, December 2017, based on ABS Labour Force Study

<sup>&</sup>lt;sup>32</sup> This does not include employees in downstream processing sectors such as printing, packaging and related conversion sectors.

<sup>&</sup>lt;sup>33</sup> Western Research Institute, 'Economic & Government Revenue Impacts – Australian Paper', 2017

<sup>&</sup>lt;sup>34</sup> Australian Bureau of Statistics data, analysed by IndustryEdge

'Drivers! Start your engines...' Source: Visy Industries



### Tumut's Teenage Team Reaches World Championship in Inaugural Year

## Regional secondary students compete on global stage with paper company support, as STEM takes centre stage

More than just a local dream, with the support of Visy Pulp & Paper, Tumut High School's F1<sup>™</sup> in Schools team has taken on the world, in Singapore at the World Championships in August 2018.

F1<sup>™</sup> in Schools is a rigorous, holistic, worldwide challenge which incorporates the use of design and technology into the real world. Students are essentially placed in charge of an F1 Company: from designing a miniature F1 car that reaches speeds of 80km/h, the manufacturing of the vehicle, the team marketing, to the securing of stakeholders and management. It is all a part of the competition!

In their first 'season', the Tumut High School Team was second placed at the Australian national finals, earning the right to compete in the World Championships.

The Tumut High School team was recognized at the Australian National Finals for more than its engineering, design and of course, the speed of their vehicle. They also won awards for Best Managed Enterprise, Best Team Marketing, Best Graphic Design and Best Newcomers!

The F1<sup>™</sup> in Schools STEM Challenge imitates the world of a Formula One team. Groups of students have to follow a pathway of engineering and manufacturing disciplines: design, analyse, test, make and race. They are provided with access to real-world technology such as 3D CAD/CAM/ CAE engineering design software and quickly become proficient in areas such as Coding, Computational Fluid Dynamics and Finite Element Analysis.

This practical, integrated and inspiring STEM program is multi-faceted and multi-disciplined. It is about much more than cars, although the idea of being involved in car design has proved to be a powerful means of attracting even the most uninitiated students to discovering more about STEM.

Each year, more than 22,000 high school students in Australia are involved in the F1<sup>™</sup> in Schools program. Australian teams have won the F1<sup>™</sup> in Schools World Championship six times, including in both 2017 and 2018.

STEM education and training is critical for all workers in every modern pulp and paper mill, especially in regional areas, where external skills can be less reliable. Building the regional STEM skill base is a vital part of modern manufacturing regions.

Visy Industries has been the proud principal supporter of Tumut High School's F1<sup>™</sup> in Schools team since its inception, helping local children, from regional Australia, compete with the best of the rest of the world.

<sup>&</sup>lt;sup>35</sup> IndustryEdge, based on import parity pricing



#### TREES WOOD PAPER

#### **About AFPA**

paper industry are:Australian Paper

Visy IndustriesCirca Group

Norske Skog Australasia

**Member companies** 

AFPA's members in the Australian pulp and

IndustryEdge (www.industryedge.com.au)

AFPA is the peak national industry body representing the Australian forest, wood and paper products industry's interests to governments, the general public and other stakeholders on matters relating to the sustainable development and use of Australia's forests and associated manufacturing and marketing of wood and paper products in Australia.







# IndustryEdge

This report was compiled for AFPA and its members by the independent industry analyst and market research firm

The data used to establish this report is publicly available or otherwise reported by AFPA members. It was verified and aggregated by IndustryEdge.

Data referenced to NewsMediaWorks was also researched by IndustryEdge, through comprehensive industry surveys, undertaken in accordance with approved methodologies.

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