National Recycling and Recovery Surveys (NRRS)

PAPER PACKAGING, GLASS CONTAINERS, STEEL CANS AND ALUMINIUM PACKAGING

Prepared for the Australian Packaging Covenant Organisation

Prepared by
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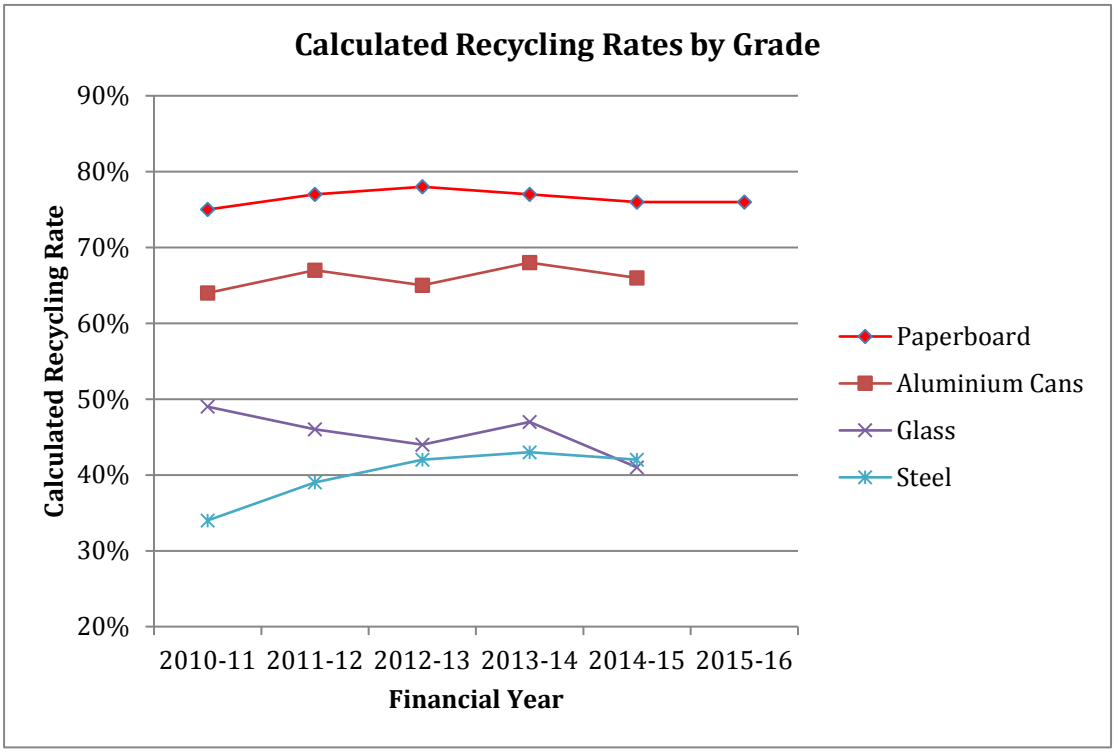
ABOUT THIS REPORT

This report was prepared for the Australian Packaging Covenant Organisation (APCO) after multiple consultations with governments and industry participants. State and Territory governments were consulted on the initial findings of the research and provided extensive feedback on the methodologies used, which informed the publication of this report. APCO, Industry Edge and Equilibrium acknowledge the feedback received and would like to thank all stakeholders for their input.

EXECUTIVE SUMMARY

Calculated Total Recycling Rates: 2010-11 to 2015-16

Financial Year	Total Consumption not including plastics and non-beverage aluminium (kt)	Total Recycled not including plastics and non-beverage aluminium (Processed & Exported) (kt)	Calculated Recycling Rate
2010-11	3 840.6	2 559.8	67.3%
2011-12	3 980.5	2 597.9	65.3%
2012-13	4 054.1	2 692.5	66.4%
2013-14	4 045.4	2 704.9	66.9%
2014-15	4 168.3	2 637.9	63.3%
2015-16	4 230.2	2 763.2	65.3%
% +/- pa	**2.1**	**1.5**	



Source: IndustryEdge & Equilibrium

- The Total Calculated Recycling Rate, inclusive of all grades and therefore being influenced by the large volumes pertaining to specific grades, increased to 65.3% in 2015-16.
- Primary drivers for the increase were changes in consumption of some materials over 2015-16, as well as changes in some recycling arrangements.
- The Total Calculated Recycling Rate is a factor of both the volume being consumed for the various grades, and therefore available for each grade, and the structure of what remains, by international comparison, a relatively undersized

end market for recycled products and therefore a relatively small and sometimes uncompetitive recycling sector. Given the relatively long distances to ship recycled materials to competitive markets such as China, significant upwards movement in the Total Calculated Recycling Rate will require demand for the recycled material to rise considerably, to drive improved shipment rates.

- Total consumption in 2015-16, rose 61.9 kt or 1.5% on the prior year. However, as noted above, this relatively small rise masked some more significant changes in consumption patterns between the different materials.
- In 2015-16, recovery and recycling increased by 125.3 kt or 4.8% on the prior year.
- The above chart shows the trend lines for the Calculated Recycling Rate for each of the grades over the past five financial years. For details relevant to each grade, please refer to the briefing points below.

Project Management

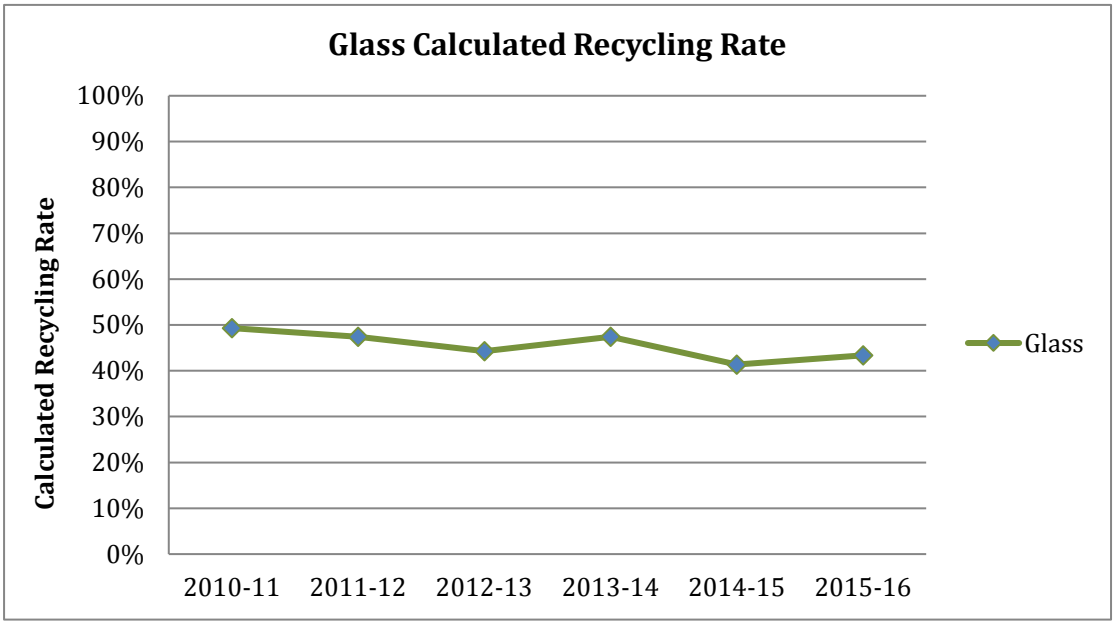
- Working with industry to gather and collate the data continues to be challenging. The major factors being the number of times industry is approached for the provision of various types of trade data, increasing awareness of competition and hence a creeping desire to not participate in projects of this type and a falling perception in the value to industry in participating in such undertakings.
- With reference to the first point above, and from the perspective of the project owners and managers, considerable emphasis is consistently placed on improving the quality of the data being delivered by industry.
- The inclusion of import data continues to be an integral part of total consumption and recycling figures. However, there continues to be a number of blatant errors in the data supplied by government agencies, and a cooperative approach between industry organisations and responsible government entities to resolving current standards and improving the accuracy of available data is recommended.
- Figures provided by corporations, as well as Customs and ABS, continue to be revised on a historical basis. These minor changes have flowed through this report, and it should be noted these historical changes have not made any significant change to trends or proportions between grades.
- Despite the value of the Australian dollar declining in the last period, retailers in particular continue to import significant volumes of packaged beverages and food. This flows through to fluctuating levels of material between imports and local supplies. The gains and losses do not necessarily balance out on a year by year basis. Moreover, imports of empty packaging are growing.
- During 2015-16, the trend towards the importation of empty packaging increased sharply. Glass packaging is, for the second consecutive year, most notable in this respect.
- Imports of consumer goods, especially by domestic residences and small offices, have resulted in a rise in packaging material, especially paperboard, entering the consumption and then recovery and recycling streams. There continues to be no satisfactory available analysis of changes with reference to this structural change currently available.

- Work needs to continue with industry to refine the accuracy of the supplied data and to better define the baseline for progressive changes in recovery and recycling trends. In part this is occurring with a slight revision of the historical data as stated above.

Glass

Calculated Glass Recycling Rates: 2010-11 to 2015-16.

Financial Year	Total Consumption (kt)	Total Recycled (Processed & Exported) (kt)	Calculated Recycling Rate
2010-11	1 054	520	49%
2011-12	1 210	552	46%
2012-13	1 248	552	44%
2013-14	1 259	597	47%
2014-15	1 364	564	42%
2015-16	1 253	543	43%
% +/- pa	**3.5**	**0.9**	



Source: IndustryEdge & Equilibrium

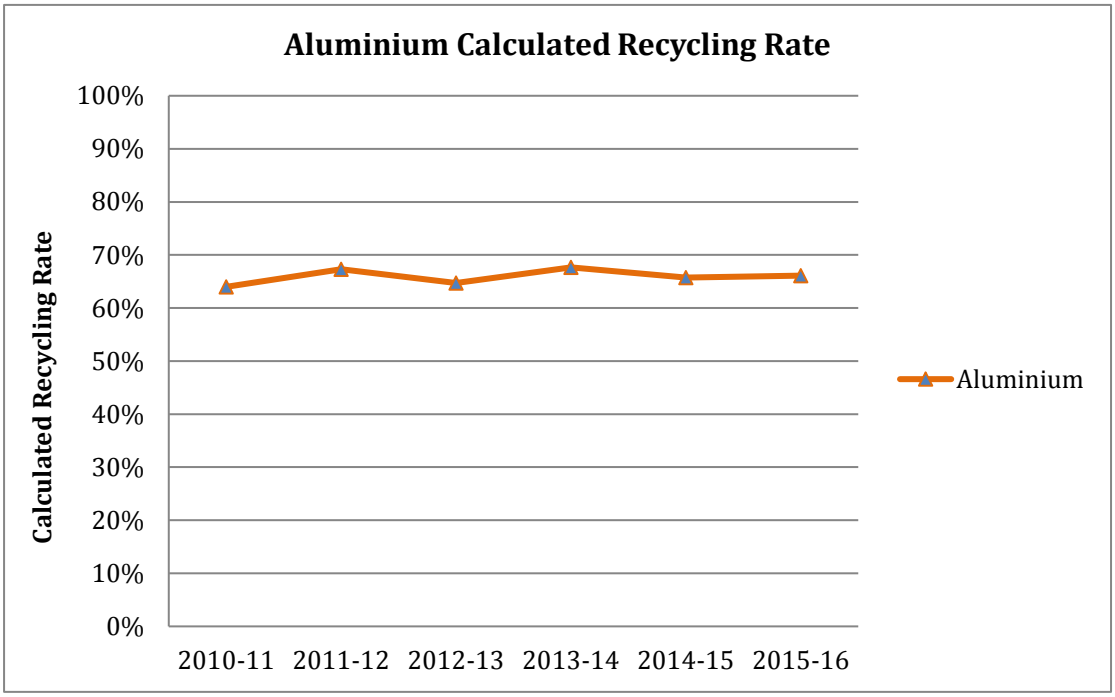
- The volume of glass being recovered and recycled has increased in real terms over the five-year period. However, the rate of consumption has risen faster (although it declined in 2015-16).
- The glass recycling rate rose in 2015-16, to 43%, having fallen sharply the previous year. However, this rise was the result of the decline in consumption (8.1% lower compared with the prior year) being greater than the decline in recovery over the year (3.7% lower compared with the prior year).
- Actual tonnes of recycling peaked in 2013-14 at 597,100 tonnes, but has subsequently declined to 543,344 tonnes in 2015-16. The decline of 53,756 tonnes or 9.0% of the two years is material, if not significant.

- After the large rises in consumption in 2014-15, glass packaging consumption declined in 2015-16. There may have been some inventory effect over the last two years, but this data is not gathered.
- The decline in the volume of domestically produced glass utilised for some beverages is impacting consumption rates, as well as demand for recycled glass.
- It continues to be significant that importation of empty glass packaging (for local filling) increased again in 2015-16. Compared with the prior year, imports were up 15.6% in 2015-16. This is an important trend, because the growth in imports potentially displaces domestic production, thereby reducing demand for recovered glass for use in local bottle production. This is a factor reflected in the 2015-16 data.
- Glass consumption has been increasing at an average annual rate of 3.5% since 2010-11.
- Structural challenges, including sub-optimal market prices for recovered glass and markets constrained by specification requirements, continue to impact recycling rates in some situations. This situation is directly attributable to highly competitive import pricing.
- Changes to MRF contracts have included increased bulk hauling from regional and rural areas and across State boundaries, thereby creating glass fines and contributing to the loss of recoverable glass.
- Constrained market conditions for recovered glass for both packaging and other secondary markets have been experienced for a large part of 2014-2015.

Aluminium Cans

Calculated Aluminium Cans Recycling Rates: 2010-11 to 2015-16.

Financial Year	Total Consumption (kt)	Total Recycled (Processed & Exported) (kt)	Calculated Recycling Rate
2010-11	57.2	36.6	64%
2011-12	52.9	35.6	67%
2012-13	56.0	36.3	65%
2013-14	57.2	38.7	68%
2014-15	58.0	38.1	66%
2015-16	59.7	39.4	66%
% +/- pa	**0.9**	**1.5**	



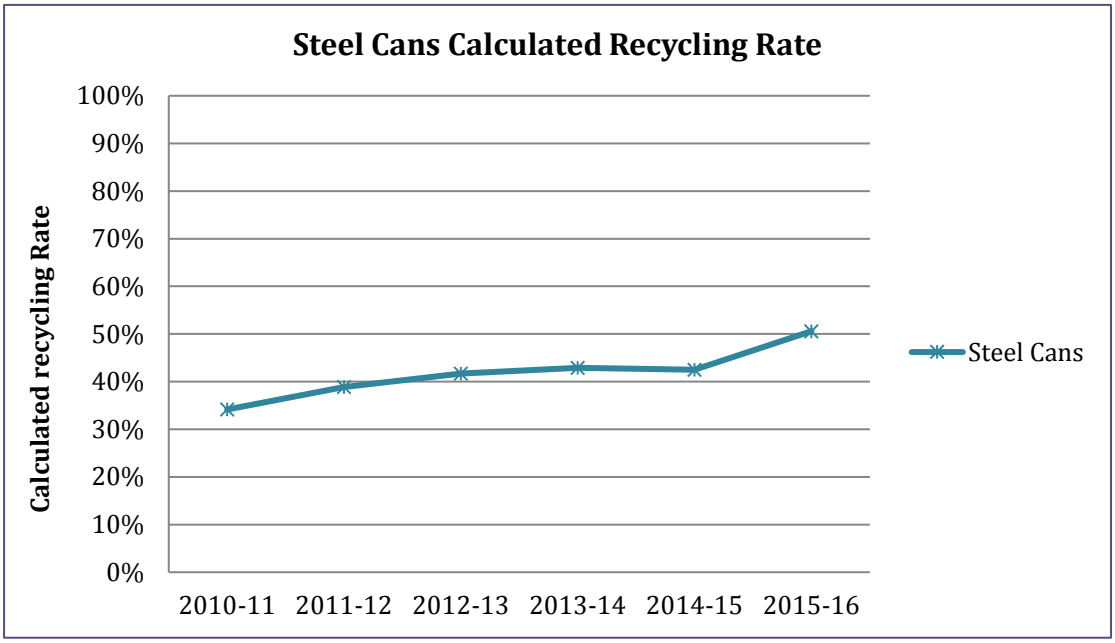
Source: IndustryEdge & Equilibrium

- In 2015-16, aluminium can consumption rose by 1,641 tonnes or 2.8% on the prior year, while recovery and recycling increased by 1,295 tonnes or 3.4% on the prior year.
- Industry advises that the rise in consumption of aluminium cans comes at the expense of consumption of glass containers.
- Customs reports indicate that imports in aluminium cans remain almost entirely of beer.
- Over 2015-16, recycling of aluminium cans recovered some of the ground last in 2014-15. The calculated recycling rate in 2015-16 was 66.1%

Steel Cans

Calculated Steel Cans Recycling Rates: 2010-11 to 2015-16

Financial Year	Total Consumption (kt)	Total Recycled (Processed & Exported) (kt)	Calculated Recycling Rate
2010-11	127.6	43.6	34%
2011-12	109.9	42.7	39%
2012-13	103.4	43.1	42%
2013-14	117.4	50.4	43%
2014-15	119.2	50.6	41%
2015-16	106.5	53.9	51%
% +/- pa	**-3.6**	**4.3**	



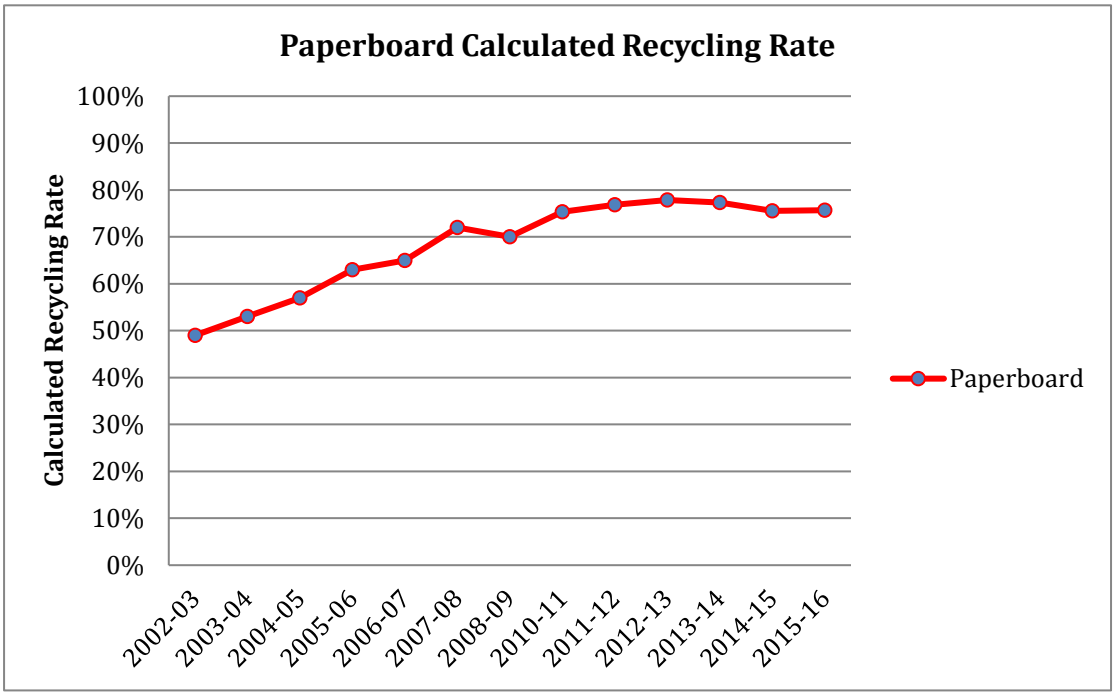
Source: IndustryEdge & Equilibrium

- In 2015-16, consumption of steel cans fell to 106,515 tonnes, down 10.6% on the prior year, while recycling increased 3,251 tonnes or 6.4% on the prior year.
- Steel can data may not fully reflect actual consumption as increased importation of filled cans continues to be reported, but is not discernible in Customs reports on packaging import tonnes.
- Importation data for tinned fruit and other food types show less granular details about sizes of containers, making it more difficult to calculate total tonnages of steel containers imported as filled food packaging.
- Retailers continue to report steady importation of canned product, especially fish, fruit and vegetables, for 2015-16.

Paperboard

Calculated Fibre Packaging Recycling Rates: 2002-03 to 2015-16

Financial Year	Total Consumption (kt)	Total Recycled (Processed & Exported) (kt)	Calculated Recycling Rate
2002-03	2 476	1 211	49%
2003-04	2 413	1 277	53%
2004-05	2 439	1 390	57%
2005-06	2 522	1 591	63%
2006-07	2 639	1 720	65%
2007-08	2 599	1 860	72%
2008-09	2 497	1 756	70%
2009-10	2 681	2 024	75%
2010-11	2 602	1 960	75%
2011-12	2 561	1 968	77%
2012-13	2 647	2 061	78%
2013-14	2 611	2 018	77%
2014-15	2 627	1 985	76%
2015-16	2 811	2 126	76%
% +/- pa	**1.6**	**1.6**	



Source: IndustryEdge

- In 2015-16 consumption of fibre packaging rose 184,000 tonnes or 7.0% on the prior year, while the Calculated Recycling Rate rose 141,560 tonnes or 7.1% on the prior year.

- The determination of Calculated Recycling Rates have been undertaken by *IndustryEdge* since 2002-03. As a result, there is a longer series of reference points over a longer period are available for analysis.
- For 2015-16, recycling, as a proportion of total material available for collection, was stable at 76%, but remains at or near international best practices, driven by industry and its efforts to maximise resource recovery and recycling.
- Imports of fibre packaging on imported goods was 1.43 million tonnes in 2015-16, based on ongoing analysis of import volumes reported by the Australian Bureau of Statistics and the growing volume of internet purchases.
- In 2015-16 exports of recovered fibre on packaging goods amounted to 70,000 tonnes and total fibre recovered for recycling off shore amounted to 1.49 million tonnes, of which 811,000 tonnes was recovered fibre packaging materials.
- The figures show that the increase in the recovery rate, rising at an average of 4.4% per annum, has been significantly faster than the relatively slow rate of consumption growth, which has been increasing at an average rate of 1.0% per annum.

Non-Beverage Aluminium

Calculated Non-Beverage Aluminium Packaging Recycling Rates: 2010-11 to 2015-16

Financial Year	Total Consumption (kt)	Total Recycled (Processed & Exported) (kt)	Calculated Recycling Rate
2010-11	8.2	3.7	45%
2011-12	7.5	3.7	49%
2012-13	7.5	3.6	48%
2013-14	7.4	3.6	48%
2014-15	7.6	3.8	50%
2015-16	9.0	3.9	44%
Ave % Change pa	**1.9**	**1.1**	

Source: IndustryEdge & Equilibrium

- The majority of non-beverage aluminium containers by number and weight are aerosols for personal care. The packaging is also used for a range of personal care and health care products, cans non-food applications, trays, foil and closures.
- Non-beverage aluminium is less than12% of all aluminium used for packaging (more than 88% of aluminium packaging is used in beverage packaging).
- Industry reports and data indicates local production has remained at close to the volume reported in previous years, however, total consumption figures by weight rose on the previous year but are trending down at -1.9% pa over the past five years. This may be due to further light-weighting of some packaging items, including closures.
- Recovery volume and rates remain steady with material recovery facilities reporting no discernible change in presentation rates and sorting activities.
- The closure of the Alcoa Yennora (NSW) rolling mill in 2014-15 has not had a discernable impact on recovery rates.
- Global prices for recovered aluminium remain high and material recovery facility operators report not barriers to export of recovered materials.
- The challenge to improved recovery rates of non-beverage aluminium continues to be raising awareness of the recyclability of such packaging and the capability of material recovery facilities to sort smaller sized packaging or fractions of packaging.