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COMPILATION OF CONTESTABLE DATA FOR 2011-12 FINANCIAL
YEAR ON THE CONSUMPTION AND RECYCLING OF ALUMINIUM,
GLASS, LPB, PET AND HDPE BEVERAGE CONTAINERS

(INCLUDING A COMPARISON AGAINST COMPARABLE DATA FOR
THE 2010-11 FINANCIAL YEAR)

6TH MARCH 2013

FOR

PACKAGING STEWARDSHIP FORUM OF THE
AUSTRALIAN FOOD AND GROCERY COUNCIL

Introduction

- The following comprehensive table presents derived supply and recycled volumes for the five major grades of beverage containers, aluminium, glass, liquidpaperboard (LPB), polyethylene terephthalate (PET) and high-density polyethylene (HDPE), plus a recycling rate for each grade and national beverage container recycling rate.
- The data is presented over a two-year period, being the financial years , 2011-12 and 2010-11.
- For each grade of material the variation between the two periods is firstly documented in tonnes, and then as a proportion difference against the base period of 2010-11.
- The change in the proportion recovered for each grade over the two periods is documented.
- Analysis by material type is documented after the presentation of the table.

Summary and key issues:

Supply and Recycled Rates by Beverage Container Type: 2010-11 and 2011-12 (Tonnes & %)

	Aluminium	Glass	LPB	PET	HDPE	Total
2011-12						
Supply (tonnes)	58,847	982,663	32,722	98,044	152,981	1,325,256
Recycled (tonnes)	37,160	541,248	*19,000	58,718	69,752	725,873
Recycling %	63.1	55.1	58.0	59.9	45.6	54.8
2010-11						
Supply (tonnes)	58,098	969,504	31,321	109,823	153,976	1,322,722
Recycled (tonnes)	36,600	498,660	18,575	63,063	66,690	683,588
Recycling%	63.0	51.4	59.3	57.4	43.3	51.7
Difference 2010-11 to 2011-12						
Supply (tonnes)	+ 749	+ 13,159	+ 1,401	- 11,779	- 995	+2534
Recycled (tonnes)	+ 560	+ 42,588	+425	- 4,345	+ 3,062	+ 42,284
Recycling %	+ 0.1	+ 3.7	-1.3	+ 2.5	+ 2.3	+ 3.1
% Difference 2010-11 to 2011-12						
Supply	1.3%	1.4%	4.5%	-10.7%	-0.6%	0.2%
Recycled	1.5%	8.5%	2.3%	-6.9%	4.6%	6.2%
Recycling%	+ 0.1	+ 3.7	- 1.3	+ 2.5	+ 2.3	+ 3.1

Source: IndustryEdge and Equilibrium

* *The LPB recycled figure for 2011-12 is a calculated estimate since the LPB waste stream is divided between segregated LPB as a separate entity, and LPB comingled with other fibre waste streams.*

- By weight (tonnes), beverage container supply increased by 0.2% and recycling increased 6.2%.
- This results in a 3.1% increase in the total recycling rate for beverage containers by weight to 54.8%.
- There has been an increase in imported empty beverage packaging and filled beverage products.
- Import of empty glass packaging, while off a low base. has increased during the survey period.

- Import of filled beer, cider, water and wine has increased markedly.
- Light-weighting of plastics bottles (PET in particular) is resulting in a decrease in total tonnes supplied and consumed.
- On the recycling side, commodity prices for recovered materials in 2011-2012 started weak but strengthened throughout the year.
- Competition in kerbside recycling strengthened and reported prices being paid to councils reached record highs in some jurisdictions, reflecting rising commodity prices, the efficiency of mature material recovery facilities, effective householder participation and the impact of new investment and technology.

Addendum

Aluminium cans

Supply

Movement: Increased by 1.3%

Comment: The total tonnage of aluminium cans through the supply chain increased marginally due to a small increase in imports, a corresponding fall in exports and an increase in the supply of energy drinks. To counter this trend there was a small trend away from locally brewed beer sold in cans to imported beer, as well as cider, sold in bottles.

Recycling

Movement: Increased by 1.5%

Comment: Aluminium cans are a major part of the beverage container sector, and as such are readily recognised and recycled by consumers. There has been significant investment by recyclers to extract and collect aluminium cans from the recycling streams, and the value for aluminium remains strong and is such that it would be expected the total recycled would have increased more.

Recycling Rate

Movement: Increased by 0.1%

Comment: The small increase in the proportion of aluminium cans recovered and recycled is not significant and shows a slightly higher increase in the proportion of tonnes recovered and recycled than the increase in tonnes supplied / consumed.

Glass

Supply

Movement: Increased by 1.4%

Comment: There is a national trend in increased imported beer and cider consumption. This has significantly driven up imports of filled glass beverage containers. Imports of bottled wine have also increased, driven by the strength of the Australian currency and cheaper production from countries where there are economic problems.

Recycling

Movement: Increased by 8.5%

Comment: There has been a discernable increase in the amount of glass recovered and recycled on the back of recent investments in glass recovery systems for both bottle-to-bottle recycling and secondary glass markets.

Recyclers and collectors of glass report there is a clear improvement in the volume of glass in the recovery streams, but the issue for most of them is to find markets where the recycled glass can be sold for reprocessing.

Compaction of the material at various stages of the waste streams is resulting in the loss of some glass.

Recycling Rate

Movement: Increased by 3.7%

Comment: Recovery of glass has improved, however, there are structural issues in the industry with recycled glass moving from Sydney to Melbourne by one firm and vice versa by another firm. The recycling of glass, while clearly promoted and encouraged effectively, is very much reliant on better end uses and markets.

Liquidpaperboard

Supply

Movement: Increased by 4.5%

Comment: Liquidpaperboard (LPB) supply is not as readily defined as many stakeholders may believe. There are some products such as soup, stock and sauce containers that are lined board, often with polymers, that are active as liquid containers but may not be all board. In the context of this survey all containers for liquids and manufactured from board are considered to be LPB. The total volumes by weight are not significant and a 4.5% increase in supply does not signal a significant market shift but industry reports suggest it is sign of increased milk sales and a continuing migration of some beverages and liquids from steel packaging into LPB.

Recycling

Movement: Up by 2.3%

Comment: The apparent rise in recycled LPB is a calculated figure based on best available data. The figures reported by industry were for the volume of LPB that was extracted and recovered in a defined waste stream for LPB. However, the majority of material recovery facilities / recyclers are now not extracting LPB in its own right, and are incorporating the waste material in general fibre recycle and recovered streams. Therefore the increase of 2.3% includes both LPB recycled as a defined waste stream and LPB recycled as part of a commingled wastepaper and paperboard stream.

Recycling Rate

Movement: Down by 1.3%

Comment: Most waste stream collectors and recyclers have little incentive to extract LPB from general board recycling. Therefore, with a decline in the recording of LPB as a separate entity in the recovery process and increased inclusion of LPB in mixed paper streams there is a perception recycling rates are trending down. While industry estimates show that more LPB is being included in the comingled wastepaper and paperboard streams the lack of granular data limits more detailed findings at this time.

PET

Supply

Movement: Down by 10.7%

Comment: The decline in the tonnage of PET containers in the market is a direct result of the light-weighting of bottles, some by more than 30%. The number of containers is calculated to have increased marginally, but the tonnage has reduced.

Recycling

Movement: Down by 6.9%

Comment: The decline in the tonnage of PET recycled is less than the fall in the tonnage change in the supply to the market. This is positive news in that it confirms more PET containers are being recycled. An issue for recyclers is that there is a need to collect more light-weight containers to accumulate a tonne of recycled PET.

Recycling Rate

Movement: Increased by 2.5%

Comment: The recycling rate for PET containers increased even though total tonnes recycled declined as the total tonnes of supply declined more.

HDPE

Supply

Movement: Down by 0.6%

Comment: The specific reasons for the slight decline in HDPE tonnages for beverages is not clear, but market reports indicate some light-weighting and improved production along with mature markets for many beverages in HDPE meaning little current market growth.

Recycling

Movement: Increased by 4.6%

Comment: Used HDPE containers maintained strong commodity prices through 2011-2012, generally increasing across most jurisdictions towards the end of the period. The material enjoys a relatively constant high demand globally. The quantity being diverted from general waste into recycled streams

remains robust, potential factors being the increase in 2 litre milk sales driven by supermarket discounting, and consumer recycling awareness through education and communication campaigns.

Recycling Rate

Movement: Increased by 2.3%

Comment: Despite the slight fall in the available HDPE for recycling, the volume collected has risen by 4.6%. The material is readily extracted from the recovered waste streams, has strong commodity pricing and markets for the recycled material are constant and available.

National Total

Supply

Movement: Up by 0.2%

Comment: There is a marginal increase in total beverage packaging supply. While there has been an increase in glass, aluminium and liquid paper-board tonnes, there has been a reduction in plastic beverage packaging, especially PET. The decline in the weight of PET containers largely offsets the increase in total weight of beverage containers, especially imported glass filled containers, in the supply chain.

Recycling

Movement: Increased by 6.2%

Comment: The total volume of beverage containers by weight has increased, especially driven by the rise in glass recycling tonnes. When the lighter weight of PET containers is taken into consideration, as well as the recyclers recording partial recovery of LPB separately, an increase in tonnage terms of 6.2% also suggests an underlying increase in the number of beverage containers being collected and recycled.

Recycling Rate

Movement: Increased by 3.1%

Comment: The national recycling rate for the weight of material recovered has increased by 3.1%. While it is difficult to convert this directly into the proportional change in the volume of containers being recovered, it is judged to be in the vicinity of an increase of more than 5% over the period of only a year.

Issues arising

- Strong Australian currency, energy prices and other general economic factors will continue to put pressure on local beverage manufacturers.
- Strong Australian currency will drive continued importation of empty beverage packaging as well as filled beverage products.
- Collection and recovery systems in many jurisdictions are reportedly reaching capacity, which may present a capacity constraint for increased recovery and recycling rates.
- Market responses to capacity constraints observed to date are on collections (moving to 360 litre kerbside recycling bins) and renewed Government support for new recovery and recycling investment and infrastructure.
- Some recent investments in MRF capacity and materials processing (such as glass sorting and PET recycling) have not yet been operational for a full year and their impact on recycling rates will be more evident in the 2012-2013 financial year.

Methodology

It is important to note the gathering and documentation of the data for each grade has been to directly approach many companies which are either manufacturers, brand owners or recyclers and discuss first-hand the data that has been required to undertake this project, confirm confidentiality, ensure consistency in the data gathering process and on every occasion to be cognisant of the importance of immediate and future relationships.

For trade data, figures have been collated from the ABS using harmonised trade codes and then assed at the greatest level of detail practical.

Manufacturers

The major manufacturers for each of the five grades were requested to assist by providing production volumes for the 2011-12 financial year. The major issues arising is that not all manufacturers are willing to be fully cooperative, and amongst those that agreed to assist, there was some uncertainty regarding the accuracy of their data and the definitions of what was being reported.

Considerable effort has been undertaken to clarify these issues, and where companies have not been cooperative for different reasons the questions have been asked that may assist in the completion of the project, rather than the companies directly

divulging their corporate data. Examples would be if they could provide their market share for the relevant grades, or if they were increasing output against previous years.

The figures obtained for the volume of manufacturing for each grade have not been used in the final calculations. However, it has been a necessity to collect and collate this set of data so as to provide a benchmark against which the volume of material used by brand owners could be judged.

Brand Owners

Known owners of beverage brands were categorised by market shares based on the volume of each of the packaging grades used.

For aluminium and glass, the major brand owners were generally associated with alcoholic beverages, while for LPB, PET and HDPE, the brand owners were generally more associated with non-alcoholic beverages. These categorisations are of a general nature since there is a significant volume of both aluminium and glass used in the provision of soft drinks.

Brand owners are expected to be more cautious regarding the provision of the volume of material used in beverage packaging, however, some companies have been exceptional in the assistance provided while others have genuinely shown little or no interest in being involved.

Market shares for beverage brands have been able to be sourced from a range of reliable research, especially Retail World, and very experienced industry sources have been able to assist by discussing the refinements to market shares that may have been necessary.

As a consequence, the derived volume for each beverage packaging grade has been improved considerably during the process of the project.

Imports

Import data at a ten digit harmonised code level was extracted from the ABS to cover the financial year 2011-12, for all beverages. The chapters accessed were ABS 20, 22, 39, 70, 73 and 76.

Non-beverage material data was removed from the files, as well as all codes covering the importation of beverages in containers outside the criteria of the project, eg >3 litres.

Experienced assessment was requested and attained from companies and agencies trading in the shipment of beverages regarding the proportion of each relevant harmonised code descriptor being imported by different sized containers, that is

between 250 ml through to 2 litres. For each of these container types by grade a weight was also recorded.

Through a model using Excel the volume of beverages for each inclusive grade by volume type was determined, which was then related to the number of units, to which the weight of the beverage containers was applied to find the total weight by beverage container grade by container volume.

The calculated results were discussed with major traders, and the results achieved were approved and accepted across the industries.

Exports

Exports were calculated in a similar manner as imports, however, the harmonised codes were only calculated at the eight digit level, since that is the lowest, or most detailed, the ABS collect and provide. The same rigours were applied to the calculations to determine the volume of beverage container material being exported as containers for beverages.

Data Confidentiality

The volumes for each of the five grades of container materials through the process of assessing the volumes reportedly manufactured and consumed have been collated and documented. However, for most grades there are insufficient participants to mask adequately confidential data. If total figures through each stage were to be published, then it would certainly be possible for those who have supplied figures to subtract their own data to derive the figures for their competitors. This is a totally unacceptable scenario, and to avoid this, the data used to compile supply will not be released.

Calculation of Apparent Consumption

Supply figures for each of the five grades, being aluminium, glass, LPB, PET and HDPE, have been generated by using the brand owner total figures, adding imports and subtracting exports. It is believed this is potentially the most thorough degree of examination of the figures pertaining to beverage container volumes undertaken in current reporting.

The supply figures for each grade were assessed against the manufacturing base line figures, and it must be noted for aluminium, LPB and PET there is a reasonably high degree of fit, providing initial confidence figures to be estimated above 0.85. However, for glass and HDPE there are still some variances between manufacturing and calculated supply figures, requiring on going work for these two grades.

As stated above, so as to ensure confidentiality under circumstances where there are insufficient participants to adequately mask data, the totals for each stage of calculation apparent consumption will not be provided for public edification.

Recyclers

Recyclers were categorised in a similar manner as brand owners, being separated by major players and progressively smaller players.

A number of major recycling facilities were visited as part of the project, and questions for management and owners were focussed on the accuracy of the recycling figures, how they were attained and audited, issues impacting rates of recovery for recycling, markets for recycled materials, degrees of separation of recycled materials and strength of future markets.

The figures collected first hand from the major recycling companies, and then applied to market knowledge show the recycling figures provided in this report will be sufficiently accurate to provide a benchmark for national performance. The exception may be for LPB, since the grade is both separated out into a waste stream of its own, as well as comingled with recovered paper and paperboard streams.

Recycling Rates

The recycling rates shown have been determined by the volume of each grade recycled as a proportion of the supply figures.