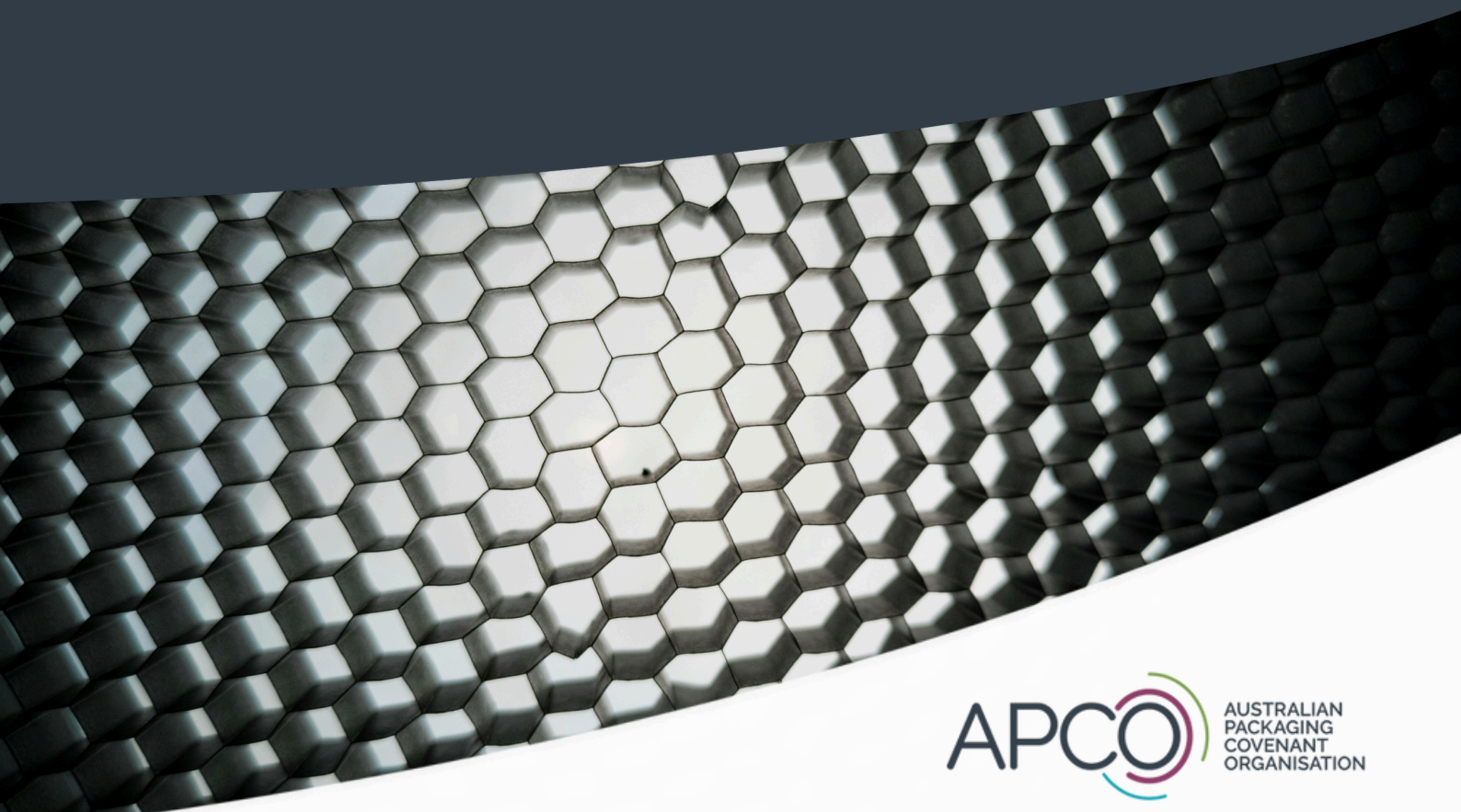
Version 1: November 2025

AUSTRALIAN PACKAGING CONSUMPTION & RECOVERY DATA 2023-24



AUSTRALIAN PACKAGING COVENANT ORGANISATION

Disclaimer

The Australian Packaging Covenant Organisation Ltd (APCO) and the contributing authors have prepared this report with a high-level of care and thoroughness and recommend that it is read in full. This report is based on generally accepted practices and standards at the time it was prepared. It was prepared in accordance with the scope of work and for the purpose outlined in the project brief. The method adopted, and sources of information used are outlined in this report, except where they were provided on a confidential basis. This report has been prepared for use by APCO, and only other third parties who have been authorised by APCO. APCO and the contributing authors are not liable for any loss or damage that may be occasioned from directly or indirectly using, or relying on, the contents of this publication. This report does not purport to give legal or financial advice. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Acknowledgements

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Authors

Report prepared by Blue Environment and IndustryEdge on behalf of APCO.

Contents

Executive summary

Background

In 2018, all levels of Australian Government, including representatives from local, state and territory and federal governments, came together with industry to launch Australia's National Packaging Targets (NPTs).

This report provides packaging consumption and recovery data for Australia for financial year 2023–24, to inform the measurement of progress towards the National Targets. This is the seventh iteration of the annual report, which began in the 2017–18 base year.

The data in this report is also intended to support the sustainability of packaging by informing strategic planning across the lifecycle of packaging – design, manufacturing, use, disposal, and end-of-life.

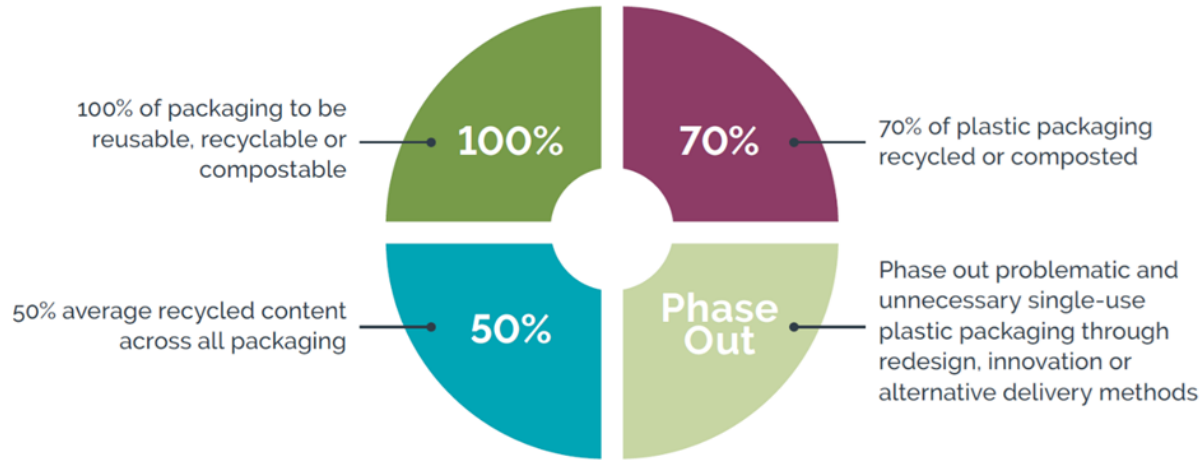

Figure ES-1 – Australia's National Packaging Targets.

Progress towards the National Packaging Targets

Table ES-1 provides a summary of the National Packaging Targets and the 2017–18 to 2023–24 results against each target.

Table ES-1 – Summary of the National Packaging Targets and progress to 2023–24.

Target	Target	2017–18 result	2018–19 result	2019–20 result	2020–21 result	2021–22 result	2022–23 result	2023–24 result
100% of all Australia's packaging will be reusable, recyclable or compostable	**100%**	88%	89%	86%	86%	84%	86%	86%
70% of Australia's plastic packaging will be recycled or composted	**70%**	16%	18%	16%	18%	20%	19%	20%
50% average recycled content will be included across packaging[a]	**50%**	35%	39%	39%	39%	40%	44%	44%
Problematic and unnecessary single-use plastic packaging will be phased out[b,c]	**Reduction in priority items**	Baseline	-41%	-31%	-28%	-33%	-40%	-46%

a) Post-consumer recycled content only. Does not include wood or manufacturing scrap (pre-consumer) recycled content.

b) Priority items considered include PVC, PS, EPS, fragmentable plastics, and lightweight shopping bags POM.

c) These estimates are subject to a relatively large accuracy range and high year-on-year reporting volatility. Estimated value is relative to the baseline year (2017–18).

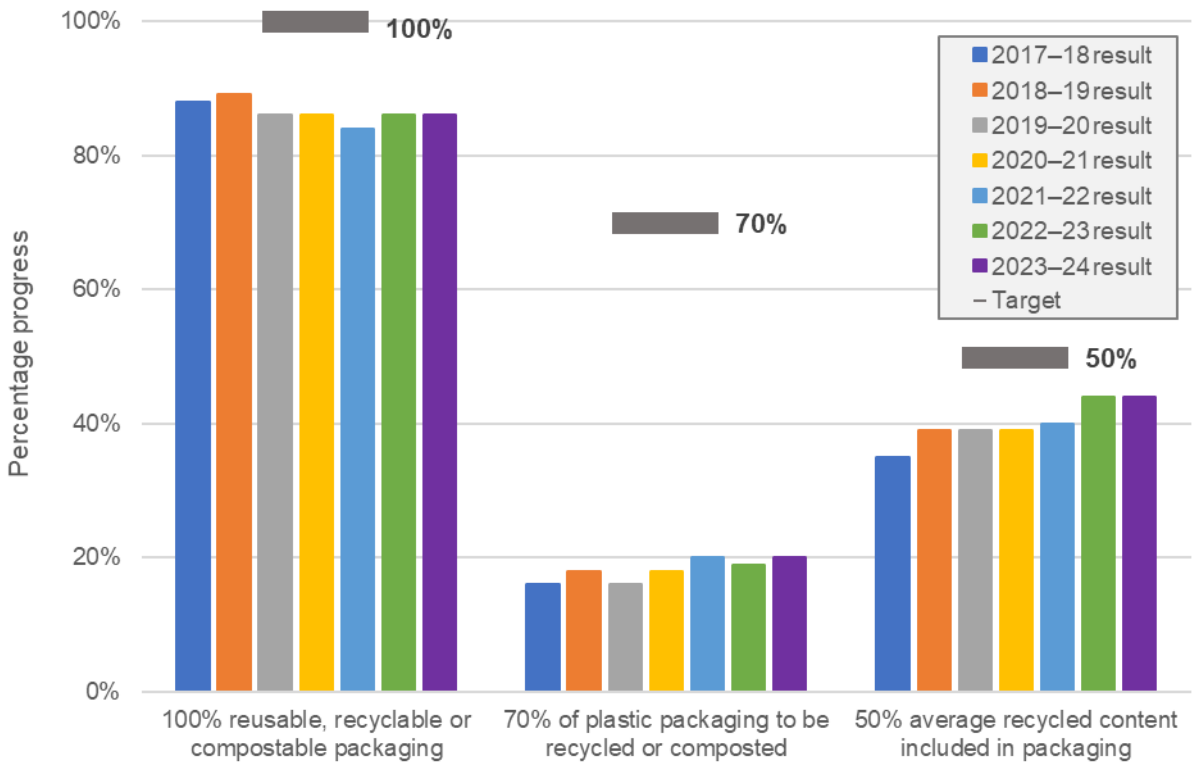

Figure ES-2 – Summary of the National Packaging Targets and progress to 2023–24.

Packaging consumption in 2023–24

Total packaging placed on market (POM) in Australia in 2023–24 is estimated at 6.84 million tonnes (±10%). POM means that the packaging has been made available to the end-consumer (including business users). It includes locally manufactured and imported packaging (filled or unfilled).

The materials making up the 6.84 million tonnes of packaging POM in 2023–24 were paper & paperboard (54.0%), glass packaging (15.5%), rigid plastic packaging (10.9%), flexible plastic packaging (7.6%), wood packaging (7.6%) and metal packaging (4.2%).

Estimates for packaging POM by material group are provided in **Table ES-2** and **Figure ES-3.** The aggregated accuracy range estimates for each of the material groups are also provided as error bars in **Figure ES-3**.

Table ES-2 – Packaging POM in 2023–24, by material group.

Material group	POM			Accuracy range
	(tonnes)	(%)	(kg/person)	(±%)
Paper & paperboard	3,693,000	54.0%	136	7%
Glass	1,063,000	15.5%	39	8%
Plastic – Rigid	748,000	10.9%	28	17%
Plastic – Flexible	521,000	7.6%	19	17%
Metal	289,000	4.2%	11	10%
Wood	523,000	7.6%	19	14%
Total	**6,837,000**	**100.0%**	**251**	**10%**

The accuracy ranges are weighted sum averages of the estimated level of accuracy (±%) reported by packaging manufacturers on the tonnages of packaging POM. The accuracy range provides an estimate of the range within which the true value of POM can be found, with the reported tonnage being the best estimate of the true value.

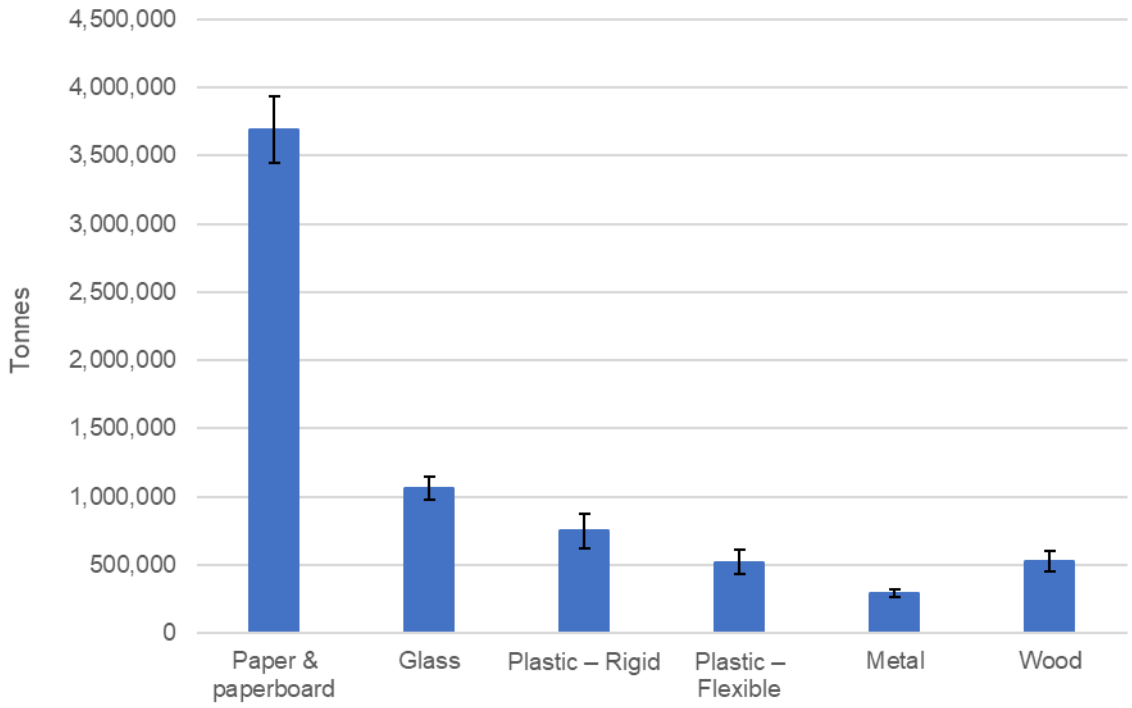

Figure ES-3 – Packaging POM in 2023–24, by material group.

In 2023–24, the estimated packaging POM was 3% lower than the 2022–23 estimate of 7.04 million tonnes. **Table ES-3** compares POM data by material group from 2017–18 to 2023–24, including the percentage change between 2022–23 and 2023–24.

Noteworthy changes in packaging POM were a 3% decrease in paper & paperboard packaging POM (down 112 kilotonnes), a 4% decrease in glass packaging POM (down 42 kt), a 7% decrease in wood packaging (down 39 kt), a 3% increase in rigid plastic packaging POM (up 24 kt), and a 4% decrease in flexible plastic packaging POM (down 20 kt).

Table ES-3 – Packaging POM from 2017–18 to 2023–24, by material group, including the percentage change between 2022–23 and 2023–24.

Year	Paper & paperboard	Glass	Plastic – Rigid	Plastic – Flexible	Metal	Wood	Total	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(kg/person)
2017–18	2,901,000	1,273,000	695,000	372,000	213,000	NR	5,453,000	218
2018–19	3,262,000	1,283,000	638,000	362,000	246,000	124,000	5,916,000	234
2019–20	3,277,000	1,156,000	600,000	524,000	248,000	462,000	6,266,000	244
2020–21	3,387,000	1,283,000	641,000	538,000	254,000	638,000	6,740,000	262
2021–22	3,654,000	1,143,000	705,000	572,000	298,000	612,000	6,984,000	269
2022–23	3,805,000	1,105,000	724,000	541,000	302,000	562,000	7,040,000	264
2023–24	3,693,000	1,063,000	748,000	521,000	289,000	523,000	6,837,000	251
Change (%)	**-3%**	**-4%**	**3%**	**-4%**	**-4%**	**-7%**	**-3%**	**-5%**

a) NR (not reported) – Wood packaging data was not collected in 2017–18.

Packaging recovery in 2023–24

Total Australian post-consumer packaging recovery in 2023–24 is estimated at 4.01 million tonnes (±13%). This recovery estimate is measured at the out-going gate of the secondary processing facility for the used packaging.

Of the packaging recovered in 2023–24, the majority was paper & paperboard packaging (60.8%), followed by glass packaging (21.2%), wood packaging (7.5%), rigid plastic packaging (5.3%), metal packaging (4.0%) and flexible plastic packaging (1.1%).

Estimates for post-consumer packaging recovery by material group are provided in **Table ES-4** and **Figure ES-4**. The estimates include post-consumer packaging collected through municipal solid waste (MSW), commercial and industrial (C&I), and container deposit scheme (CDS) collection services.

Table ES-4 – Post-consumer packaging recovery in 2023–24, by material group.

Material group	Recovery			Accuracy range
	(tonnes)	(%)[a]	(kg/person)	(±%)
Paper & paperboard	2,437,000	60.8%	90	13%
Glass	851,000	21.2%	31	11%
Plastic – Rigid	211,000	5.3%	8	9%
Plastic – Flexible	45,000	1.1%	2	9%
Metal	161,000	4.0%	6	16%
Wood	302,000	7.5%	11	20%
Total	**4,007,000**	**100.0%**	**147**	**13%**

a) Percent contribution to the total amount of packaging recovered, not the individual material recovery rate.

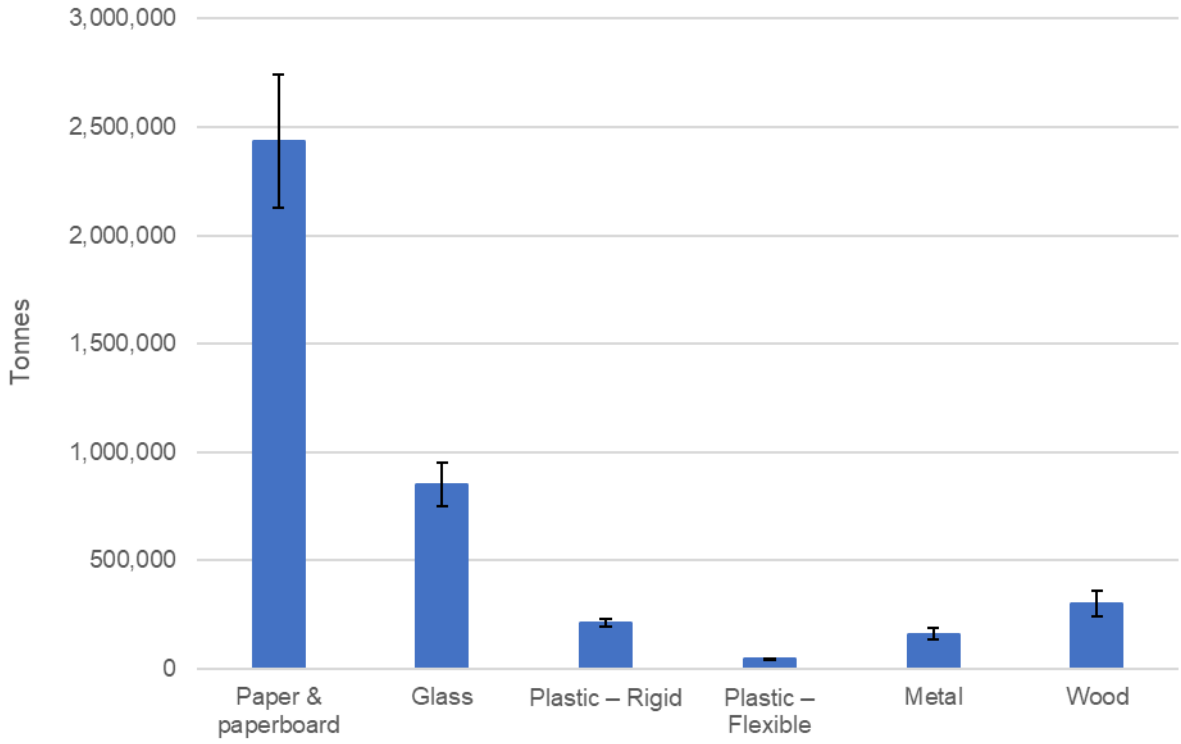

Figure ES-4 – Post-consumer packaging recovery in 2023–24, by material group.

Table ES-5 compares recovery data by material group from 2017–18 to 2023–24, including the percentage change between 2022–23 and 2023–24.

Notable changes in recovery included 12% growth in the recovery of glass packaging. Paper & paperboard recovery fell by 1%, and rigid plastic packaging recovery increased by 5%.

Table ES-5 – Post-consumer packaging recovery from 2017–18 to 2023–24, by material group, including the percentage change between 2022–23 and 2023–24.

Year	Paper & paperboard	Glass	Plastic – Rigid	Plastic – Flexible	Metal	Wood	Total	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(kg/person)
2017–18	1,817,000	582,000	144,000	29,000	102,000	NR	2,673,000	107
2018–19	2,045,000	574,000	163,000	19,000	137,000	44,000	2,982,000	118
2019–20	2,229,000	699,000	159,000	20,000	139,000	171,000	3,416,000	133
2020–21	2,370,000	805,000	167,000	40,000	147,000	260,000	3,788,000	147
2021–22	2,502,000	718,000	196,000	62,000	151,000	277,000	3,907,000	150
2022–23	2,469,000	761,000	200,000	34,000	156,000	286,000	3,907,000	147
2023–24	2,437,000	851,000	211,000	45,000	161,000	302,000	4,007,000	147
Change (%)	**-1%**	**12%**	**5%**	**31%**	**3%**	**6%**	**3%**	**1%**

a) NR (not reported) – Wood packaging data was not collected in 2017–18.

Packaging recovery rates in 2023–24

The Australian post-consumer packaging recovery rate in 2023–24 is estimated at 59%. This is based on the recovery measured at the out-going gate of the secondary processing facility for the used packaging, divided by the packaging POM.

Glass packaging had the highest recovery rate at 80%, followed by paper & paperboard packaging (66%), wood packaging (58%), metal packaging (55%), rigid plastic packaging (28%) and flexible plastic packaging (9%).

Table ES-6 – Packaging POM, post-consumer packaging recovery and post-consumer packaging recovery rates in 2023–24, by material group.

Material group	POM	Recovery	Recovery rate
	(tonnes)	(tonnes)	(%)
Paper & paperboard	3,693,000	2,437,000	66%
Glass	1,063,000	851,000	80%
Plastic – Rigid	748,000	211,000	28%
Plastic – Flexible	521,000	45,000	9%
Metal	289,000	161,000	55%
Wood	523,000	302,000	58%
Total	**6,837,000**	**4,007,000**	**59%**

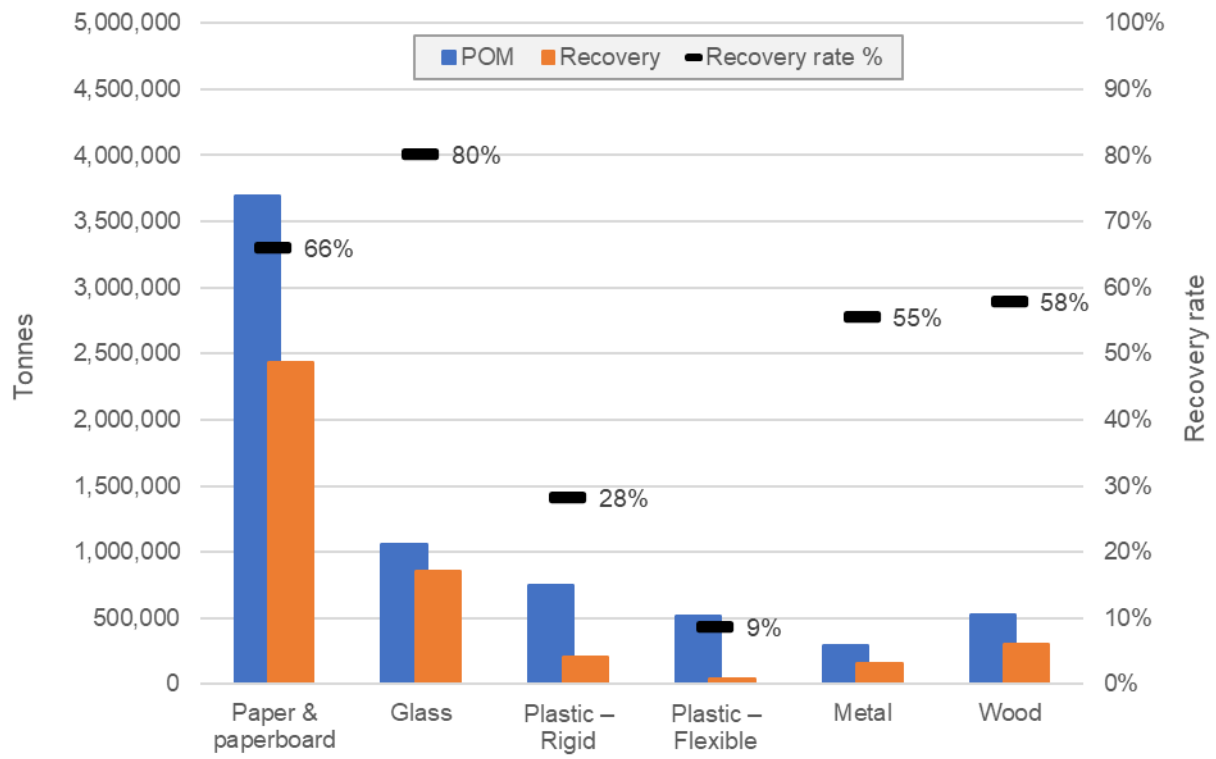

Figure ES-5 – Comparison of packaging POM, packaging recovery and post-consumer packaging recovery rates in 2023–24, by material group.

Table ES-7 and **Figure ES-6** compare recovery rates by material group from 2017–18 to 2023–24, including the percentage change between 2022–23 and 2023–24. In 2023–24 there were increases in recovery rates for paper & paperboard, glass, rigid plastic, flexible plastic, metal and wood packaging. Overall, the recovery rate was up 3% between 2022–23 and 2023–24.

Table ES-7 – Post-consumer packaging recovery rates from 2017–18 to 2023–24, by material group, including the percentage change between 2022–23 and 2023–24.

Year	Paper & paperboard	Glass	Plastic – Rigid	Plastic – Flexible	Metal	Wood	Total
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
2017–18	63%	46%	21%	8%	48%	NR[b]	**49%**
2018–19	63%	45%	25%	5%	56%	36%	50%
2019–20	68%	60%	26%	4%	56%	37%	55%
2020–21	70%	63%	26%	7%	58%	41%	56%
2021–22	68%	63%	28%	11%	51%	45%	56%
2022–23	65%	69%	28%	6%	52%	51%	56%
2023–24	66%	80%	28%	9%	55%	58%	59%
Change (%)[a]	**1%**	**11%**	**1%[c]**	**2%**	**4%**	**7%**	**3%**

a) % change values are calculated prior to rounding the annual values.

b) NR (not reported) – Wood packaging data was not collected in 2017–18.

c) The rigid plastic packaging recovery rate increased by just over 0.5%, which rounds up to 1%

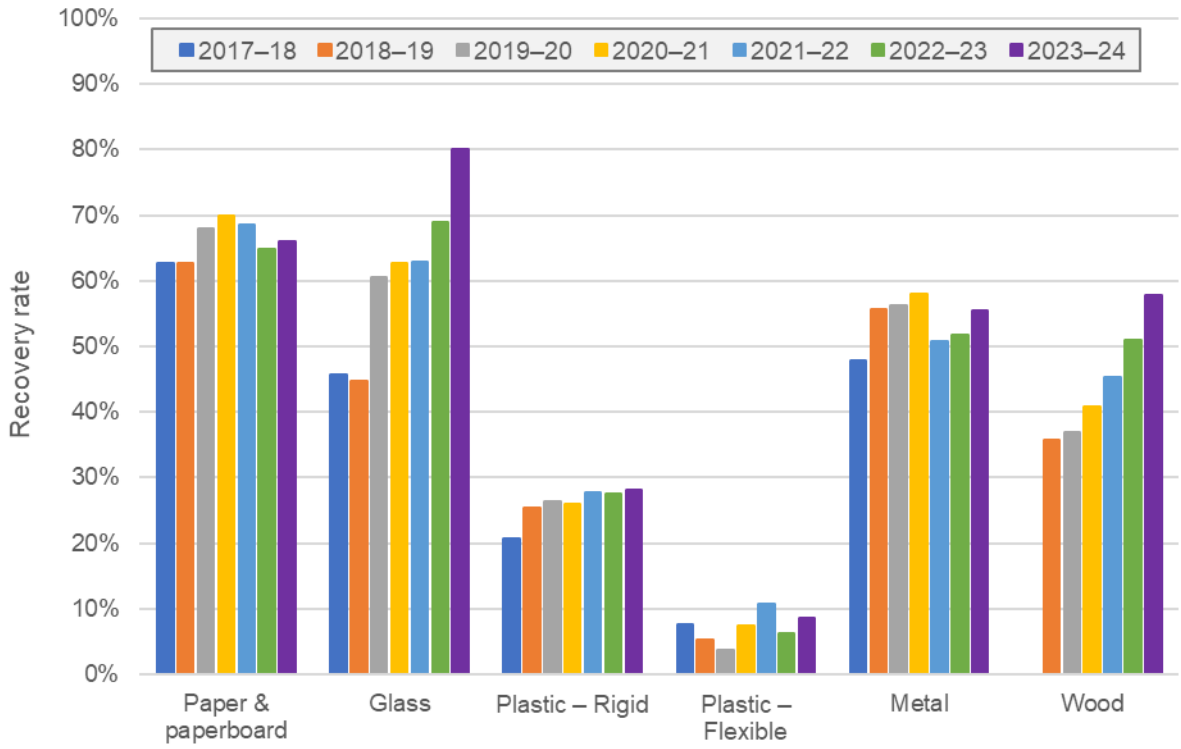

Figure ES-6 – Post-consumer packaging recovery rates from 2017–18 to 2023–24, by material group.

Packaging recycled content in 2023–24

Estimates of the recycled content incorporated into packaging POM in 2023–24, by material group, are provided in **Table ES-8** and **Figure ES-7**. The post-consumer recycled (PCR) content across all packaging (excluding wood) was 2.78 million tonnes (44% of total packaging POM), the pre-consumer recycled content was 0.65 million tonnes (10%), and 2.90 million tonnes (46%) was sourced from virgin (primary) feedstocks.

Table ES-8 – Packaging POM in 2023–24, by material group (excluding wood) and recycled content.

Material group	Post-consumer source		Pre-consumer source		Virgin source		Total
	(tonnes)	%	(tonnes)	%	(tonnes)	%	(tonnes)
Paper & paperboard	2,039,000	55%	509,000	14%	1,145,000	31%	3,693,000
Glass	577,000	54%	44,000	4%	442,000	42%	1,063,000
Plastic – Rigid	119,000	16%	27,000	4%	602,000	80%	748,000
Plastic – Flexible	5,000	1%	1,000	0%	515,000	99%	521,000
Metal	35,000	12%	73,000	25%	182,000	63%	289,000
Total	**2,775,000**	**44%**	**653,000**	**10%**	**2,886,000**	**46%**	**6,314,000**

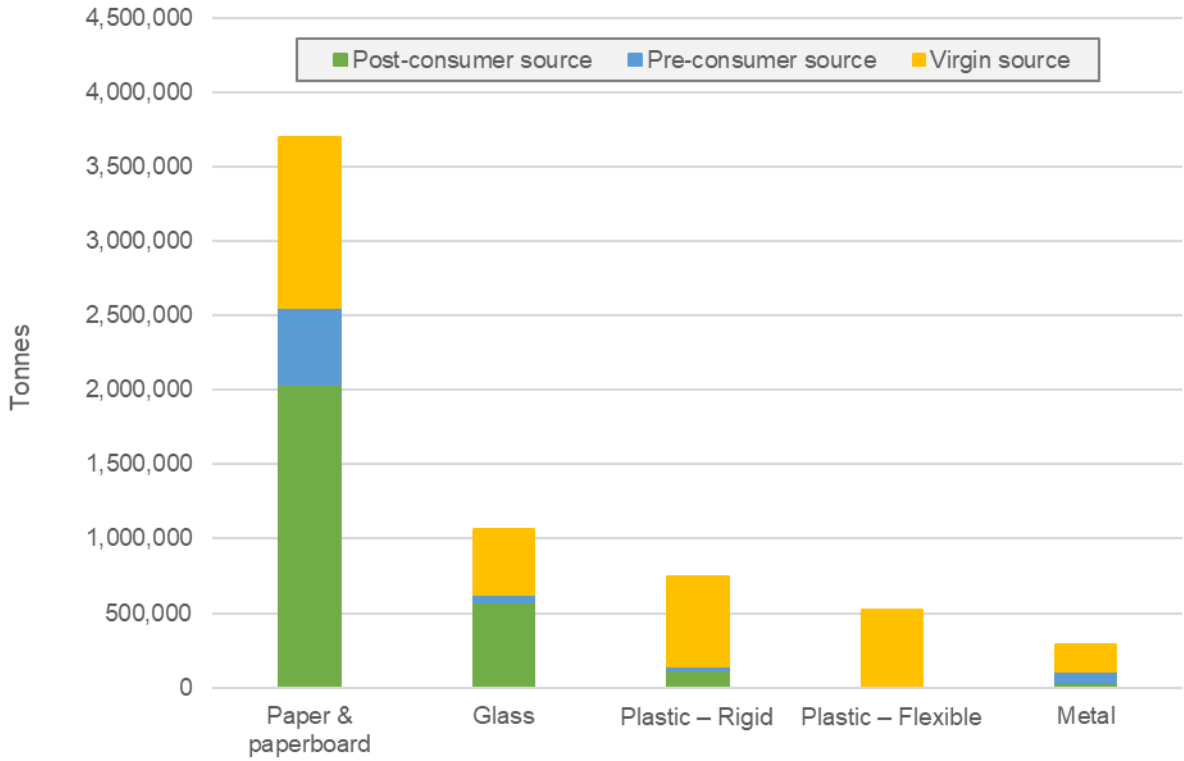

Figure ES-7 – Packaging POM in 2023–24, by material group (excluding wood) and recycled content.

Table ES-9 compares the estimated PCR content of packaging by material group from 2017–18 to 2023–24.

In 2023–24 the PCR content of packaging was 44% (excluding wood), which was the same as for 2022–23 (also 44%). The total quantity of PCR content in packaging did decrease by an estimated 44 kt (2%) compared to 2022–23. However, total packaging POM also decreased by 3%, so the average % PCR content stayed steady.

This decrease in the total PCR content was due to a decrease of 85 kt of recycled fibre content. This was offset by an increase of 22 kt in recycled glass content, and 20 kt in recycled rigid plastic content.

Table ES-9 – Packaging PCR content from 2017–18 to 2023–24, as a percentage of packaging POM, by material group (excluding wood).

Year	Unit	Paper & paperboard	Glass	Plastic – Rigid	Plastic – Flexible	Metal	Total
2017–18	Tonnes	1,421,000	407,000	23,000[a]		64,000	**1,915,000**
2017–18	% POM	49%	32%	2%[a]		30%	**35%**
2018–19	Tonnes	1,667,000	474,000	36,000	0	59,000	**2,237,000**
2018–19	% POM	51%	37%	6%	0%	24%	**39%**
2019–20	Tonnes	1,768,000	428,000	29,000	7,000	28,000	**2,260,000**
2019–20	% POM	54%	37%	5%	1%	11%	**39%**
2020–21	Tonnes	1,801,000	480,000	30,000	6,000	37,000	**2,354,000**
2020–21	% POM	53%	37%	5%	1%	15%	**39%**
2021–22	Tonnes	1,990,000	469,000	66,000	8,000	40,000	**2,572,000**
2021–22	% POM	54%	41%	9%	1%	13%	**40%**
2022–23	Tonnes	2,124,000	555,000	99,000	6,000	35,000	**2,819,000**
2022–23	% POM	56%	50%	14%	1%	12%	**44%**
2023–24	Tonnes	2,039,000	577,000	119,000	5,000	35,000	**2,775,000**
2023–24	% POM	55%	54%	16%	1%	12%	**44%**

a) Data for 'Plastic – Rigid' and 'Plastic – Flexible' is combined in 2017–18.

Packaging recycling potential in 2023–24

Estimates of packaging recycling potential classified by material group are provided in **Table ES-10** and **Figure ES-8**. Throughout the report the term *packaging recycling potential* is used as an umbrella term for reusable, recyclable, or compostable packaging.

The method for determining packaging recycling potential uses a scoring framework based on three criteria:

- the availability of a collection system,
- whether the material is technically recyclable, i.e., it can be sorted and recycled, and
- the availability of end markets.

Using this framework, each packaging format was classified as having either good recycling potential, poor (limited) recycling potential or no recycling potential. Packaging classified as having poor recycling potential does not meet, or only slightly meets, one or more criteria.

Reusable packaging (used within established reusable packaging systems) and certified compostable plastic packaging are allocated with the single-use packaging that achieves a good recycling potential classification score.

It is estimated that 5.89 million tonnes (86%) of packaging POM in 2023–24 had good recycling potential. This was dominated by paper & paperboard (of which 94% had good recycling potential) and glass (of which 100% had good recycling potential). Almost all metal packaging (99%) was classified as having good recycling potential. Wood packaging had 90% classified as having good recycling potential.

Only 48% of plastic packaging was classified as having good recycling potential, an improvement from 46% in 2022–23. However, underlying this was a 73% good recycling potential classification for rigid plastic packaging, compared with a 12% good recycling potential classification for flexible plastic packaging.

Around 0.81 million tonnes (12%) of packaging was classified as having poor recycling potential or no recycling potential.

The recycling potential status of another 0.14 million tonnes of packaging, which was entirely plastic packaging, could not be determined. It is likely that most of this packaging had poor recycling potential or no recycling potential.

Table ES-10 – Packaging POM in 2023–24, by recycling potential classification and material group.

Material group	Good recycling potential		Poor recycling potential		No recycling potential		Unknown		Total
	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)	(tonnes)
Paper & paperboard	3,458,000	94%	177,000	5%	58,000	2%	0	0%	3,693,000
Glass	1,063,000	100%	0	0%	0	0%	0	0%	1,063,000
Plastic – Rigid	548,000	73%	66,000	9%	44,000	6%	90,000	12%	748,000
Plastic – Flexible	63,000	12%	323,000	62%	87,000	17%	48,000	9%	521,000
Metal	286,000	99%	3,000	1%	0	0%	0	0%	289,000
Wood	472,000	90%	0	0%	51,000	10%	0	0%	523,000
Total	**5,889,000**	**86%**	**569,000**	**8%**	**240,000**	**4%**	**139,000**	**2%**	**6,837,000**

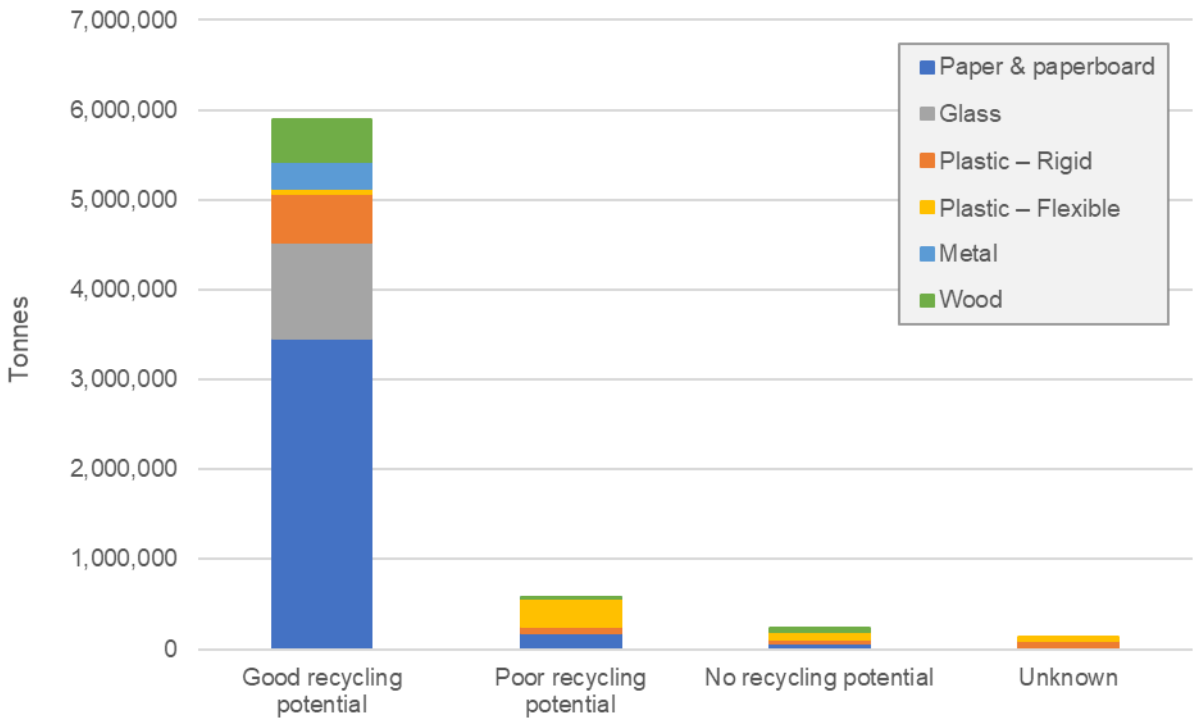

Figure ES-8 – Packaging POM in 2023–24, by recycling potential classification and material group.

Table ES-11 compares the 2017–18 to 2023–24 quantities of packaging with a good recycling potential classification.

Table ES-11 – Packaging with a 'good recycling potential' classification from 2017–18 to 2023–24, by material group.

Year	Unit	Paper & paperboard	Glass	Plastic – Rigid	Plastic – Flexible	Metal	Wood	Total
2017–18	Tonnes	2,682,000	1,273,000	315,000	312,000	201,000	NR[a]	**4,783,000**
2017–18	% POM	92%	100%	50%	71%	95%	NR[a]	**88%**
2018–19	Tonnes	2,962,000	1,283,000	388,000	275,000	243,000	121,000	**5,273,000**
2018–19	% POM	91%	100%	61%	76%	99%	98%	**89%**
2019–20	Tonnes	2,961,000	1,156,000	314,000	362,000	240,000	359,000	**5,392,000**
2019–20	% POM	90%	100%	52%	69%	97%	78%	**86%**
2020–21	Tonnes	3,147,000	1,283,000	299,000	411,000	253,000	427,000	**5,820,000**
2020–21	% POM	93%	100%	47%	75%	100%	67%	**86%**
2021–22	Tonnes	3,410,000	1,143,000	467,000	66,000	297,000	459,000	**5,842,000**
2021–22	% POM	93%	100%	67%	11%	100%	75%	**84%**
2022–23	Tonnes	3,568,000	1,105,000	516,000	63,000	296,000	508,000	**6,056,000**
2022–23	% POM	94%	100%	71%	12%	98%	90%	**86%**
2023–24	Tonnes	3,458,000	1,063,000	548,000	63,000	286,000	472,000	**5,889,000**
2023–24	% POM	94%	100%	73%	12%	99%	90%	**86%**

a) NR (not reported) – Wood packaging data was not collected in 2017–18.

1 Introduction

1.1 This project

This report provides packaging consumption and recovery data for Australia for the 2023–24 financial year (July 2023 to June 2024). This is the seventh iteration of the Packaging Consumption and Recovery Data Report published by the Australian Packaging Covenant Organisation (APCO). The previous annual reports are for the 2017–18 (baseline) to 2022–23 financial years.

This report quantifies packaging placed on market (POM), packaging recovery rates, recycling potential, reuse and losses in the system. The data helps to inform progress towards the National Packaging Targets (Targets) and support strategic planning across all levels of the lifecycle of packaging, across design, manufacturing, use, disposal and end-of-life.

The Targets are:

- 100% reusable, recyclable or compostable packaging.
- 70% of plastic packaging will be recycled or composted.
- 50% average recycled content included in packaging.
- Phase out of problematic and unnecessary single-use plastic packaging.

This report also provides trends and insights across the packaging value chain.
Additional data is provided in the following appendices:

- **Appendix A** – Glossary of terms and abbreviations used throughout this report.
- **Appendix B** – Project method.
- **Appendix C** – Consumption and recovery data by state and territory.
- **Appendix D** – Employment and facility capacity data.
- **Appendix E** – Container deposit eligible packaging data.
- **Appendix F** – Supporting data tables.

1.2 Data limitations and interpretation

In the tables presented in this report minor discrepancies may occur between the values in tables and summed totals due to rounding.

For presentation purposes mass data in this report has generally been rounded to the nearest 1,000 tonnes. However, all data should be interpreted as having a maximum of three significant figures.

The accuracy ranges provided in this report are weighted averages based on individual survey responses. The accuracy range provides an estimate of the range within which the true value can be found, with the reported value being the best estimate of the true value.

Underlying data uncertainties mean that care should be taken with assigning too much weight to small annual movements. However, more weight can be placed on larger year-on-year shifts or consistent trends over a number of years, where these are consistent with known changes in the market.

2 Packaging flows

2.1 Consumption

Packaging POM for 2023–24

Total packaging placed on market (POM) in Australia in 2023–24 is estimated at 6.84 million tonnes (±10%). Estimates for packaging POM by material group are provided in **Table 1** and **Figure 1**. The aggregated accuracy range estimates for each of the material groups are also provided as error bars in **Figure 1**. The estimates include business-to-consumer (B2C) and business-to-business (B2B) packaging.

The materials making up the 6.84 million tonnes of packaging POM in 2023–24 were paper & paperboard (54.0%), glass packaging (15.5%), rigid plastic packaging (10.9%), flexible plastic packaging (7.6%), wood packaging (7.6%) and metal packaging (4.2%).

Refer to **Appendix A** for the glossary of terms and abbreviations used throughout this report.

Table 1 – Packaging POM in 2023–24, by material group.

Material group	POM			Accuracy range
	(tonnes)	(%)	(kg/person)	(±%)
Paper & paperboard	3,693,000	54.0%	136	7%
Glass	1,063,000	15.5%	39	8%
Plastic – Rigid	748,000	10.9%	28	17%
Plastic – Flexible	521,000	7.6%	19	17%
Metal	289,000	4.2%	11	10%
Wood	523,000	7.6%	19	14%
Total	**6,837,000**	**100.0%**	**251**	**10%**

POM means that the packaging has been made available to the end-consumer (including business users), and the subsequent disposal follows the intended use of the packaging, also known as 'post-consumer' disposal. Packaging losses prior to the point of POM are considered ‘pre-consumer’ losses and are not included in **Table 1**. POM includes locally manufactured and imported packaging (filled or unfilled).

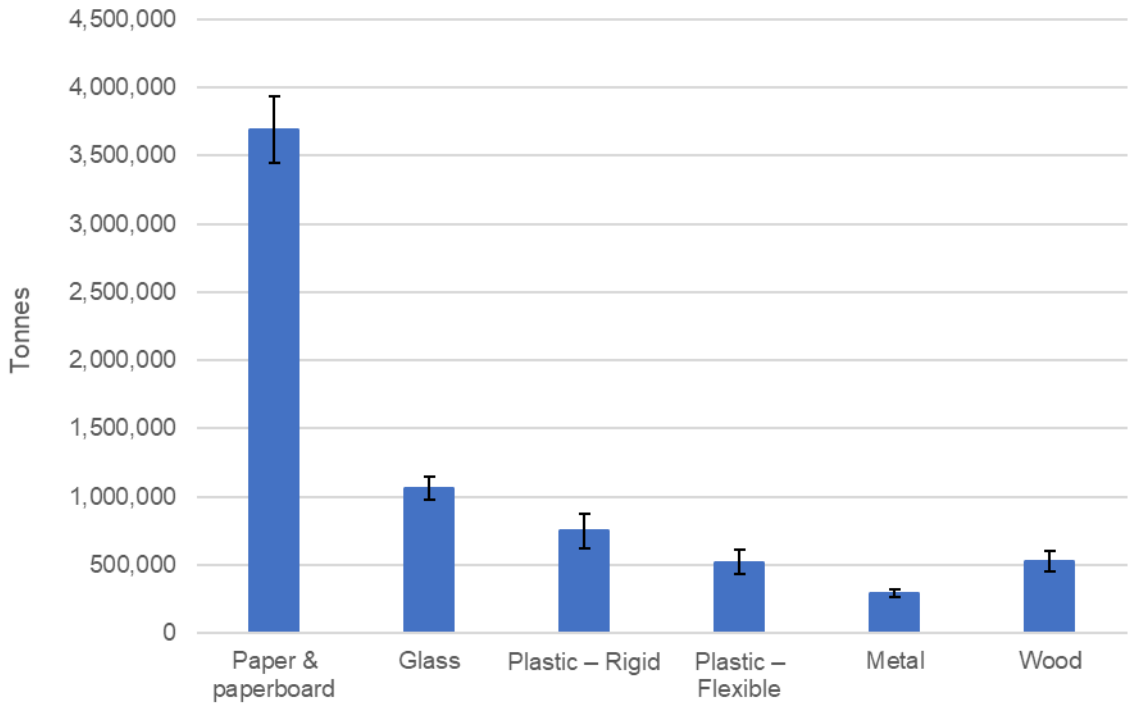

Figure 1 – Packaging POM in 2023–24, by material group.

Time-series POM data from 2017–18 to 2023–24

Table 2 and **Figure 2** compare the POM data by material group from 2017–18 to 2023–24, including the percentage change between 2022–23 and 2023–24. In 2023-24, packaging POM decreased overall, by 3% compared to the 2022–23 estimate of 7.04 million tonnes. Packaging POM per person decreased by 5%.

Noteworthy changes in packaging POM were a 3% decrease in paper & paperboard packaging POM (down 112 kilotonnes), a 4% decrease in glass packaging POM (down 42 kt), a 7% decrease in wood packaging (down 39 kt), a 3% increase in rigid plastic packaging POM (up 24 kt), and a 4% decrease in flexible plastic packaging POM (down 20 kt).

Table 2 – Packaging POM from 2017–18 to 2023–24, by material group, including the percentage change between 2022–23 and 2023–24.

Year	Paper & paperboard	Glass	Plastic – Rigid	Plastic – Flexible	Metal	Wood	Total	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(kg/person)
2017–18	2,901,000	1,273,000	695,000	372,000	213,000	NR	5,453,000	218
2018–19	3,262,000	1,283,000	638,000	362,000	246,000	124,000	5,916,000	234
2019–20	3,277,000	1,156,000	600,000	524,000	248,000	462,000	6,266,000	244
2020–21	3,387,000	1,283,000	641,000	538,000	254,000	638,000	6,740,000	262
2021–22	3,654,000	1,143,000	705,000	572,000	298,000	612,000	6,984,000	269
2022–23	3,805,000	1,105,000	724,000	541,000	302,000	562,000	7,040,000	264
2023–24	3,693,000	1,063,000	748,000	521,000	289,000	523,000	6,837,000	251
Change (%)	**-3%**	**-4%**	**3%**	**-4%**	**-4%**	**-7%**	**-3%**	**-5%**

a) NR (not reported) – Wood packaging data was not collected in 2017–18.

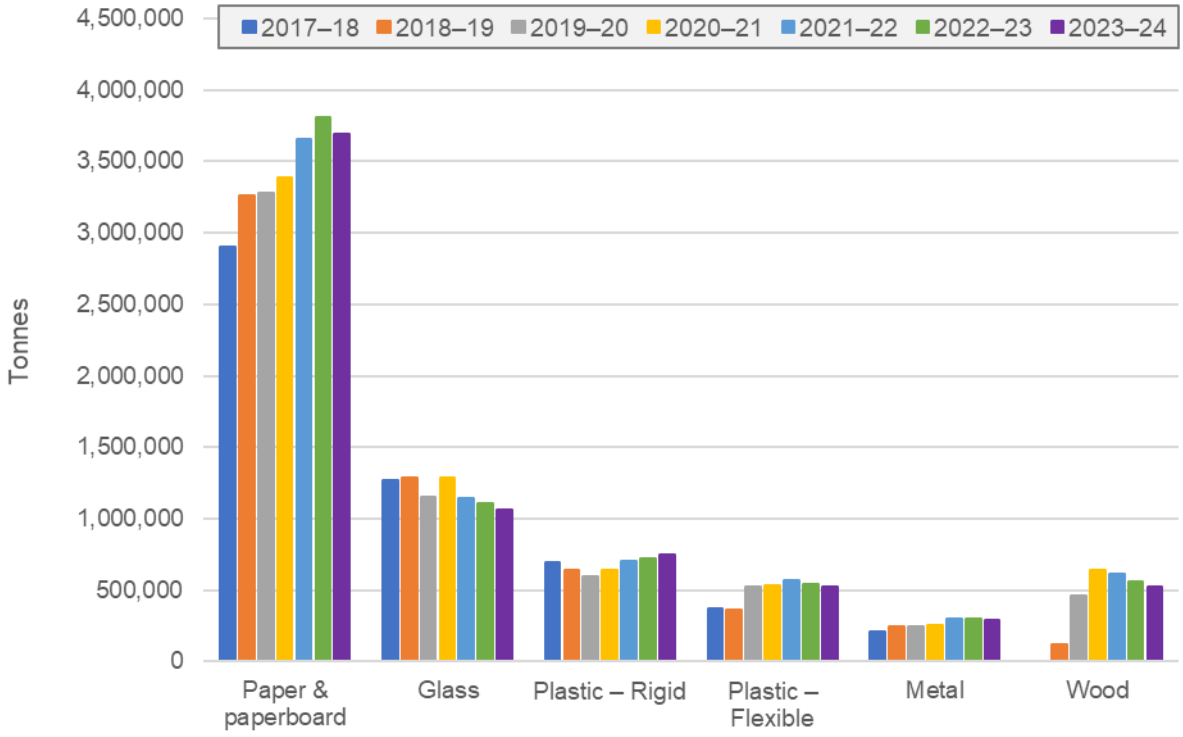

Figure 2 – Packaging POM from 2017–18 to 2023–24, by material group.

Noteworthy observations on the data above include:

- Paper and paperboard POM decreased to near 2021–22 levels, with the first observed fall since the start of reporting in 2017–18. However, the expectation of the related packaging manufacturers is for fibre packaging POM to generally grow at above per capita levels over the next few years.
- Glass packaging POM continued a slow downwards trend. This was likely in part driven by packaging lightweighting initiatives and substitution to rigid plastic packaging alternatives.

- Rigid plastic packaging POM continued with an upward trend starting in 2019–20. This could be driven both by population growth and some ongoing substitution of other materials, in particular glass.
- Flexible plastic packaging POM was down a little relative to 2022–23. This was possibly due (in part) to a significant proportion of shopping bags transitioning from plastic to fibre over the last couple of years.
- Metal packaging POM decreased with the first observed fall since the start of reporting in 2017–18. This was likely in part driven by substitution to competing rigid plastic packaging alternatives.
- Wood packaging continued an apparent steady downwards trend from 2020–21. This appears to be an unwinding of a significant increase in demand during COVID-19 pandemic, also driven in part by significantly increased timber costs over the last few years. In addition and while anecdotal, potentially pallet pool management efficiency improvements (e.g. reduced pallet losses and faster pallet cycle times) are also supporting reductions in new timber packaging consumption.

2.2 Recovery

Packaging recovery for 2023–24

Total Australian post-consumer packaging recovery in 2023–24 is estimated at 4.01 million tonnes (±13%). This recovery estimate is measured at the out-going gate of the secondary processing facility for the used packaging.

Of the packaging recovered in 2023–24, the majority was paper & paperboard packaging (60.8%), followed by glass packaging (21.3%), wood packaging (7.5%), rigid plastic packaging (5.2%), metal packaging (4.0%) and flexible plastic packaging (1.1%).

Estimates for post-consumer packaging recovery by material group are provided in **Table 3** and **Figure 3**. The aggregated accuracy range estimates for each of the material groups are also provided. The estimates include post-consumer packaging collected through MSW, C&I, C&D and CDS collection services, and are presented by collection service in **Table 4**.

Table 3 – Post-consumer packaging recovery in 2023–24, by material group.

Material group	Recovery			Accuracy range
	(tonnes)	(%)[a]	(kg/person)	(±%)
Paper & paperboard	2,437,000	60.8%	90	13%
Glass	851,000	21.2%	31	11%
Plastic – Rigid	211,000	5.3%	8	9%
Plastic – Flexible	45,000	1.1%	2	9%
Metal	161,000	4.0%	6	16%
Wood	302,000	7.5%	11	20%
Total	**4,007,000**	**100.0%**	**147**	**13%**

a) Percent contribution to the total amount of packaging recovered, not the individual material recovery rate.

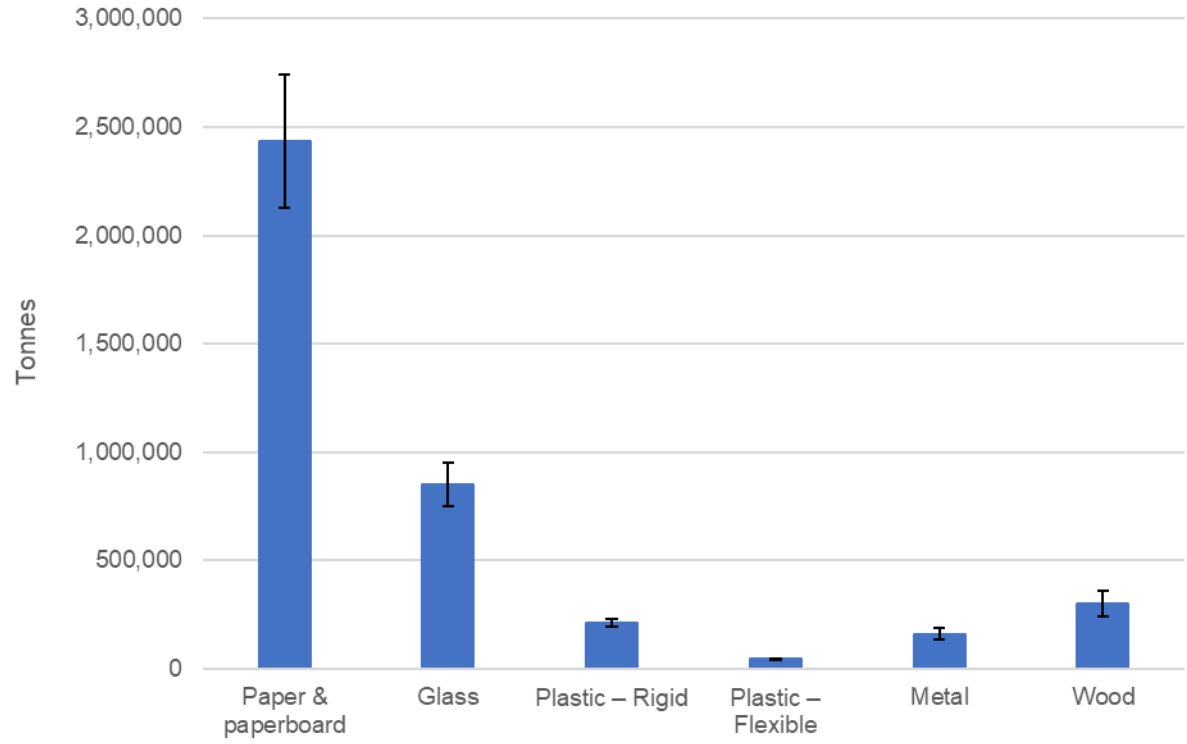

Figure 3 – Post-consumer packaging recovery in 2023–24, by material group.

Table 4 – Post-consumer packaging recovery in 2023–24, by material group and collection service.

Material group	MSW[a]	C&I[a]	C&D[a]	CDS[a]	Other	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Paper & paperboard	1,244,000	1,166,000	0	3,000	25,000	2,437,000
Glass	586,000	0	0	265,000	0	851,000
Plastic – Rigid	130,000	27,000	1,000	49,000	4,000	211,000
Plastic – Flexible	3,000	41,000	0	0	1,000	45,000
Metal	92,000	22,000	1,000	46,000	0	161,000
Wood	0	302,000	0	0	0	302,000
Total (tonnes)	**2,054,000**	**1,558,000**	**1,000**	**363,000**	**30,000**	**4,007,000**
Total (%)	**51.3%**	**38.9%**	**0.0%**	**9.1%**	**0.8%**	**100.0%**

a) MSW – municipal solid waste / C&I – commercial and industrial / C&D – construction and demolition / CDS – container deposit scheme.

Time-series recovery data from 2017–18 to 2023–24

Table 5 and **Figure 4** compares recovery data by material group from 2017–18 to 2023–24, including the percentage change between 2022–23 and 2023–24. Packaging recovery in 2023–24 was 4.01 million tonnes, which was up relative to the 2022–23 packaging recovery estimate of 3.91 million tonnes.

The changes in recovery included 12% growth in the recovery of glass packaging. Paper & paperboard recovery fell by 1%, and rigid plastic packaging recovery increased by 5%.

Table 5 – Post-consumer packaging recovery from 2017–18 to 2023–24, by material group, including the percentage change between 2022–23 and 2023–24.

Year	Paper & paperboard	Glass	Plastic – Rigid	Plastic – Flexible	Metal	Wood	Total	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(kg/person)
2017–18	1,817,000	582,000	144,000	29,000	102,000	NR	2,673,000	107
2018–19	2,045,000	574,000	163,000	19,000	137,000	44,000	2,982,000	118
2019–20	2,229,000	699,000	159,000	20,000	139,000	171,000	3,416,000	133
2020–21	2,370,000	805,000	167,000	40,000	147,000	260,000	3,788,000	147
2021–22	2,502,000	718,000	196,000	62,000	151,000	277,000	3,907,000	150
2022–23	2,469,000	761,000	200,000	34,000	156,000	286,000	3,907,000	147
2023–24	2,437,000	851,000	211,000	45,000	161,000	302,000	4,007,000	147
Change (%)	**-1%**	**12%**	**5%**	**31%**	**3%**	**6%**	**3%**	**1%**

a) NR (not reported) – Wood packaging data was not collected in 2017–18.

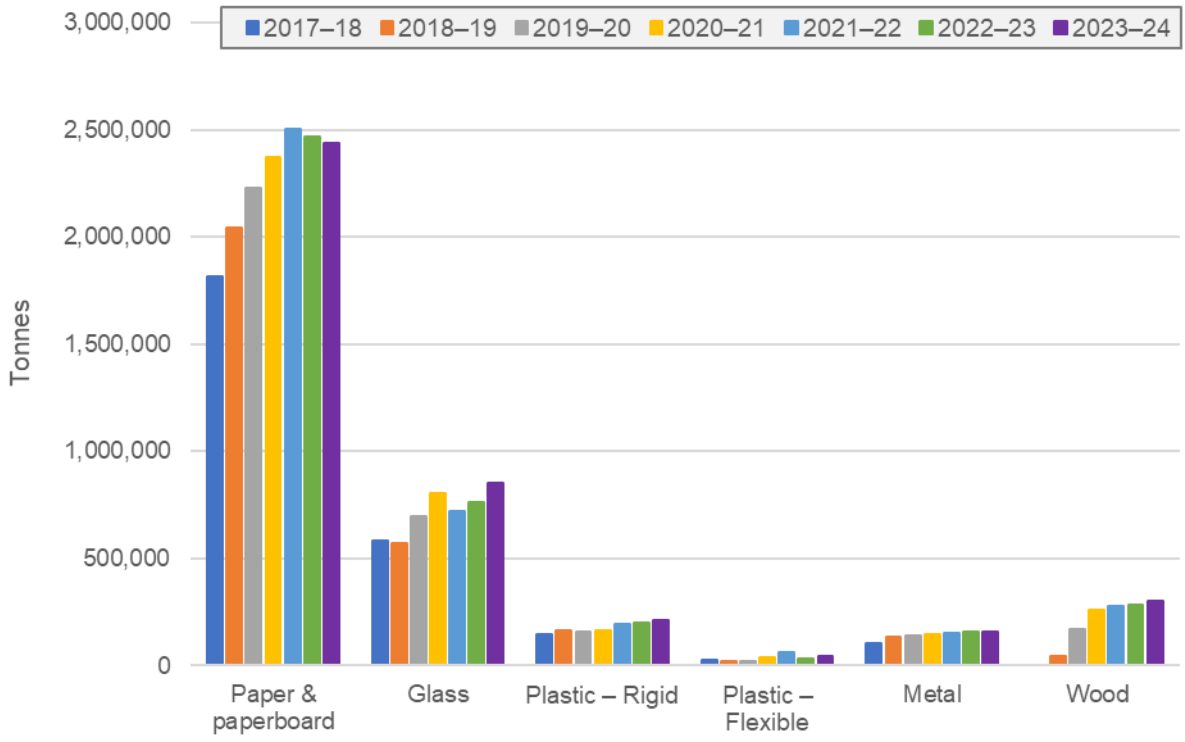

Figure 4 – Post-consumer packaging recovery from 2017–18 to 2023–24, by material group.

Recovery rates for 2023–24

Estimates for post-consumer packaging recovery rates by material group are provided in **Table 6** and **Figure 5**. The Australian post-consumer packaging recovery rate in 2023–24 is estimated at 59%. This is based on the recovery measured at the out-going gate of the secondary processing facility for the used packaging, divided by the packaging POM. Glass packaging had the highest recovery rate at 80%, followed by paper & paperboard packaging (66%), wood packaging (58%), metal packaging (55%), rigid plastic packaging (28%) and flexible plastic packaging (9%).

Table 6 – Packaging POM, post-consumer packaging recovery and post-consumer packaging recovery rates in 2023–24, by material group.

Material group	POM	Recovery	Recovery rate
	(tonnes)	(tonnes)	(%)
Paper & paperboard	3,693,000	2,437,000	66%
Glass	1,063,000	851,000	80%
Plastic – Rigid	748,000	211,000	28%
Plastic – Flexible	521,000	45,000	9%
Metal	289,000	161,000	55%
Wood	523,000	302,000	58%
Total	**6,837,000**	**4,007,000**	**59%**

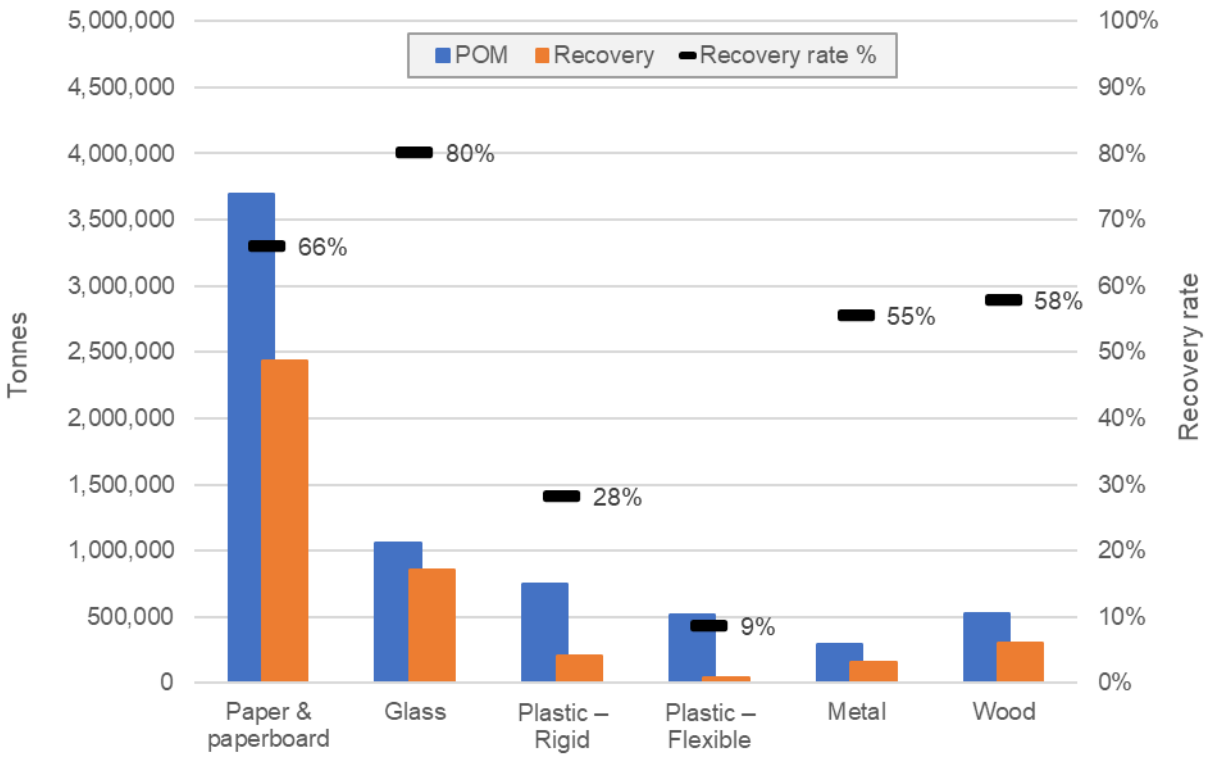

Figure 5 – Packaging POM, post-consumer packaging recovery and post-consumer packaging recovery rates in 2023–24, by material group.

Time-series recovery rates from 2017–18 to 2023–24

Table 7 and **Figure 6** compare recovery rates by material group from 2017–18 to 2023–24, including the percentage change between 2022–23 and 2023–24. In 2023–24 there were increases in recovery rates for paper & paperboard, glass, rigid plastic, flexible plastic, metal and wood packaging. Overall, the national post-consumer packaging recovery rate was up 3% between 2022–23 and 2023–24.

Table 7 – Post-consumer packaging recovery rates from 2017–18 to 2023–24, by material group, including the percentage change between 2022–23 and 2023–24.

Year	Paper & paperboard	Glass	Plastic – Rigid	Plastic – Flexible	Metal	Wood	Total
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
2017–18	63%	46%	21%	8%	48%	NR[b]	49%
2018–19	63%	45%	25%	5%	56%	36%	50%
2019–20	68%	60%	26%	4%	56%	37%	55%
2020–21	70%	63%	26%	7%	58%	41%	56%
2021–22	68%	63%	28%	11%	51%	45%	56%
2022–23	65%	69%	28%	6%	52%	51%	56%
2023–24	66%	80%	28%	9%	55%	58%	59%
Change (%)[a]	**1%**	**11%**	**1%[c]**	**2%**	**4%**	**7%**	**3%**

a) % change values are calculated prior to rounding the annual values.
b) NR (not reported) – Wood packaging data was not collected in 2017–18.
c) The rigid plastic packaging recovery rate increased by just over 0.5%, which rounds up to 1%

The underlying accuracy ranges for the POM and recovery estimates mean that it is not possible to state with certainty that a real increase in the recovery rate for paper & paperboard packaging, flexible plastic packaging or rigid plastic packaging has occurred between the two years.

However, a significant increase in the glass recovery rate has likely occurred for the second year in a row. This is consistent with developments in the glass recovery market in relation to both beneficiation and crushing capacity increases, and increased coverage and maturity of CDS systems nationally.

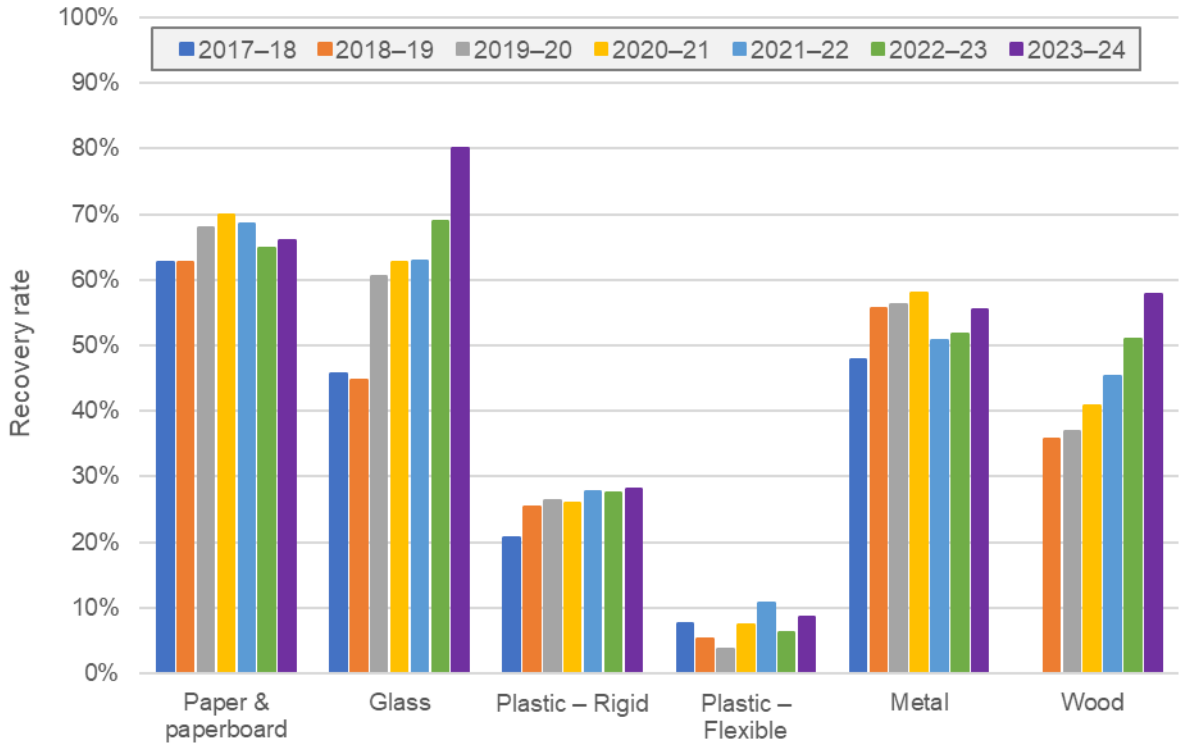

Figure 6 – Post-consumer packaging recovery rates from 2017–18 to 2023–24, by material group.

2.3 Recycled content

Packaging recycled content for 2023–24

Estimates of the recycled content incorporated into packaging POM in 2023–24, by material group, are provided in **Table 8** and **Figure 7**. The post-consumer recycled (PCR) content across all packaging (excluding wood) was 2.78 million tonnes (44% of total packaging POM), the pre-consumer recycled content was 0.65 million tonnes (10%), and 2.89 million tonnes (46%) was sourced from virgin (primary) feedstocks.

Table 8 – Packaging POM in 2023–24, by material group (excluding wood) and recycled content.

Material group	Post-consumer source		Pre-consumer source		Virgin source		Total
	(tonnes)	%	(tonnes)	%	(tonnes)	%	(tonnes)
Paper & paperboard	2,039,000	55%	509,000	14%	1,145,000	31%	3,693,000
Glass	577,000	54%	44,000	4%	442,000	42%	1,063,000
Plastic – Rigid	119,000	16%	27,000	4%	602,000	80%	748,000
Plastic – Flexible	5,000	1%	1,000	0%	515,000	99%	521,000
Metal	35,000	12%	73,000	25%	182,000	63%	289,000
Total	**2,775,000**	**44%**	**653,000**	**10%**	**2,886,000**	**46%**	**6,314,000**

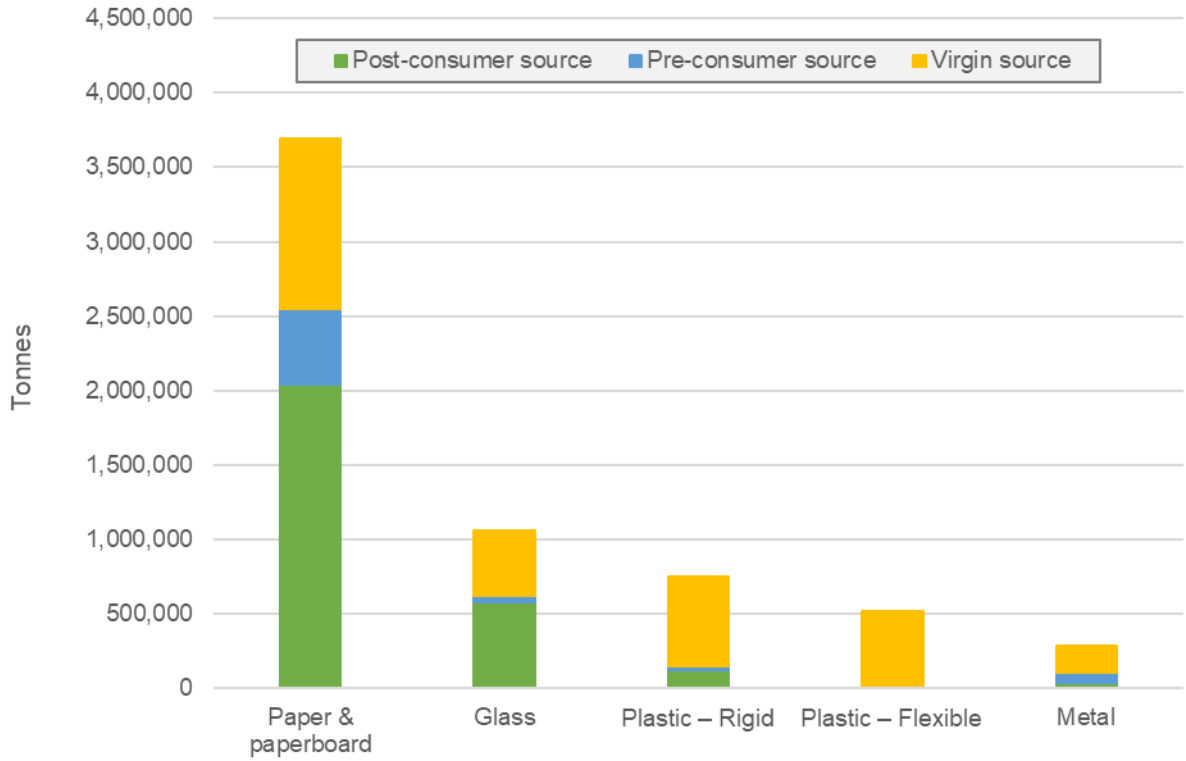

Figure 7 – Packaging POM in 2023–24, by material group (excluding wood) and recycled content.

Time-series recycled content data from 2017–18 to 2023–24

Table 9 and **Figure 8** compare the estimated post-consumer recycled (PCR) content of packaging by material group from 2017–18 to 2023–24.

In 2023–24 the PCR content of packaging was 44% (excluding wood), which was the same as for 2022–23 (also 44%). The total quantity of PCR content in packaging did decrease by an estimated 44 kt (2%) compared to 2022–23. However, total packaging POM also decreased by 3%, so the average % PCR content stayed steady.

This decrease in the total PCR content was due to a decrease of 85 kt of recycled fibre content. This was offset by an increase of 22 kt in recycled glass content, and 20 kt in recycled rigid plastic content.

Table 9 – Packaging PCR content from 2017–18 to 2023–24, as a percentage of packaging POM, by material group (excluding wood).

Year	Unit	Paper & paperboard	Glass	Plastic – Rigid	Plastic – Flexible	Metal	Total
2017–18	Tonnes	1,421,000	407,000	23,000[a]		64,000	**1,915,000**
2017–18	% POM	49%	32%	2%[a]		30%	**35%**
2018–19	Tonnes	1,667,000	474,000	36,000	0	59,000	**2,237,000**
2018–19	% POM	51%	37%	6%	0%	24%	**39%**
2019–20	Tonnes	1,768,000	428,000	29,000	7,000	28,000	**2,260,000**
2019–20	% POM	54%	37%	5%	1%	11%	**39%**
2020–21	Tonnes	1,801,000	480,000	30,000	6,000	37,000	**2,354,000**
2020–21	% POM	53%	37%	5%	1%	15%	**39%**
2021–22	Tonnes	1,990,000	469,000	66,000	8,000	40,000	**2,572,000**
2021–22	% POM	54%	41%	9%	1%	13%	**40%**
2022–23	Tonnes	2,124,000	555,000	99,000	6,000	35,000	**2,819,000**
2022–23	% POM	56%	50%	14%	1%	12%	**44%**
2023–24	Tonnes	2,039,000	577,000	119,000	5,000	35,000	**2,775,000**
2023–24	% POM	55%	54%	16%	1%	12%	**44%**

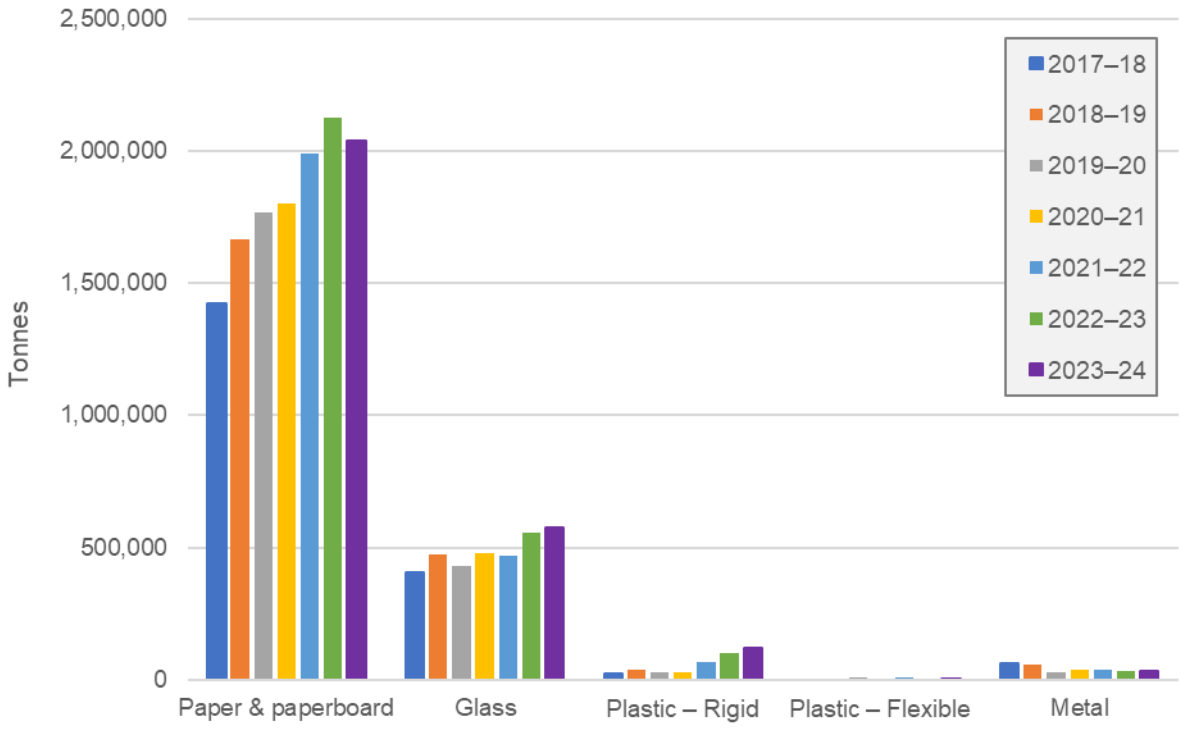

Figure 8 – Packaging PCR content from 2017–18 to 2023–24, by material group (excluding wood).

2.4 Recycling potential

Packaging recycling potential in 2023–24

In this section of the report packaging POM in 2023–24 is classified according to recycling potential. The detailed method for determining recycling potential is outlined in **Appendix B**, with the assessment based on the availability of collection systems, sortation capability, and viable end markets. Throughout the report the term *packaging recycling potential* is used as an umbrella term for reusable, recyclable or compostable packaging.

Reusable packaging (used within established reusable packaging systems) and certified compostable plastic packaging are allocated with the single-use packaging that achieves a good recycling potential classification score.

Packaging recycling potential by material group is provided in **Table 10** and **Figure 9**. It is estimated that 5.89 million tonnes (86%) of packaging POM in 2023–24 had good recycling potential. This was dominated by paper & paperboard (of which 94% had good recycling potential) and glass (of which 100% had good recycling potential). Almost all metal packaging (99%) was classified as having good recycling potential. Wood packaging had 90% classified as having good recycling potential.

Only 48% of plastic packaging was classified as having good recycling potential, an improvement from 46% in 2022–23. However, underlying this was a 73% good recycling potential classification for rigid plastic packaging, compared with a 12% good recycling potential classification for flexible plastic packaging.

Around 0.81 million tonnes (12%) of packaging was classified as having poor recycling potential or no recycling potential

The recycling potential status of another 0.14 million tonnes of packaging, which was entirely plastic packaging, could not be determined. It is likely that most of this packaging had poor recycling potential or no recycling potential.

Table 10 – Packaging POM in 2023–24, by recycling potential classification and material group.

Material group	Good recycling potential		Poor recycling potential		No recycling potential		Unknown		Total
	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)	(tonnes)
Paper & paperboard	3,458,000	94%	177,000	5%	58,000	2%	0	0%	3,693,000
Glass	1,063,000	100%	0	0%	0	0%	0	0%	1,063,000
Plastic – Rigid	548,000	73%	66,000	9%	44,000	6%	90,000	12%	748,000
Plastic – Flexible	63,000	12%	323,000	62%	87,000	17%	48,000	9%	521,000
Metal	286,000	99%	3,000	1%	0	0%	0	0%	289,000
Wood	472,000	90%	0	0%	51,000	10%	0	0%	523,000
Total	**5,889,000**	**86%**	**569,000**	**8%**	**240,000**	**4%**	**139,000**	**2%**	**6,837,000**

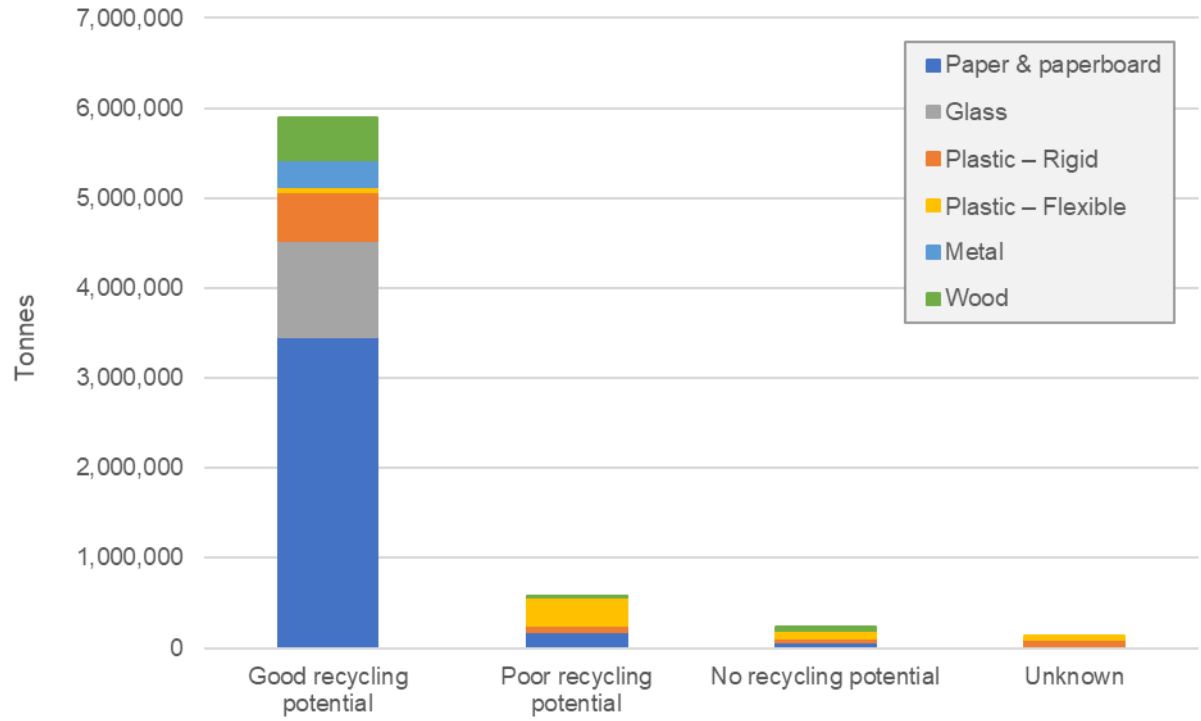

Figure 9 – Packaging POM in 2023–24, by recycling potential classification and material group.

Time-series recycling potential data from 2017–18 to 2023–24

Table 11 and **Figure 10** compare the 2017–18 to 2023–24 quantities of packaging with a good recycling potential classification. Noteworthy observations include:

- The sharp fall in the percentage of flexible plastic packaging with a good recycling potential classification between 2020–21 and 2021–22, due to the cessation of the REDcycle program in November 2022. The rate has stayed flat since 2021–22.
- The significantly increasing quantity of rigid plastic packaging with a good recycling potential classification over the last few years, in both mass and percentage terms.
- The percentage of total plastic packaging (combined rigid and flexible) with a good recycling potential increased from 46% in 2022–23 to 48% in 2023–24.
- Across all packaging the percentage with a good recycling potential has held steady at 86% from 2022–23.

Table 11 – Packaging POM with a 'good recycling potential' classification from 2017–18 to 2023–24, including a percentage relative to total POM, by material group.

Year	Unit	Paper & paperboard	Glass	Plastic – Rigid	Plastic – Flexible	Metal	Wood	Total
2017–18	Tonnes	2,682,000	1,273,000	315,000	312,000	201,000	NR[a]	**4,783,000**
2017–18	% POM	92%	100%	50%	71%	95%	NR[a]	**88%**
2018–19	Tonnes	2,962,000	1,283,000	388,000	275,000	243,000	121,000	**5,273,000**
2018–19	% POM	91%	100%	61%	76%	99%	98%	**89%**
2019–20	Tonnes	2,961,000	1,156,000	314,000	362,000	240,000	359,000	**5,392,000**
2019–20	% POM	90%	100%	52%	69%	97%	78%	**86%**
2020–21	Tonnes	3,147,000	1,283,000	299,000	411,000	253,000	427,000	**5,820,000**
2020–21	% POM	93%	100%	47%	75%	100%	67%	**86%**
2021–22	Tonnes	3,410,000	1,143,000	467,000	66,000	297,000	459,000	**5,842,000**
2021–22	% POM	93%	100%	67%	11%	100%	75%	**84%**
2022–23	Tonnes	3,568,000	1,105,000	516,000	63,000	296,000	508,000	**6,056,000**
2022–23	% POM	94%	100%	71%	12%	98%	90%	**86%**
2023–24	Tonnes	3,458,000	1,063,000	548,000	63,000	286,000	472,000	**5,889,000**
2023–24	% POM	94%	100%	73%	12%	99%	90%	**86%**

a) NR (not reported) – Wood packaging data was not collected in 2017–18.

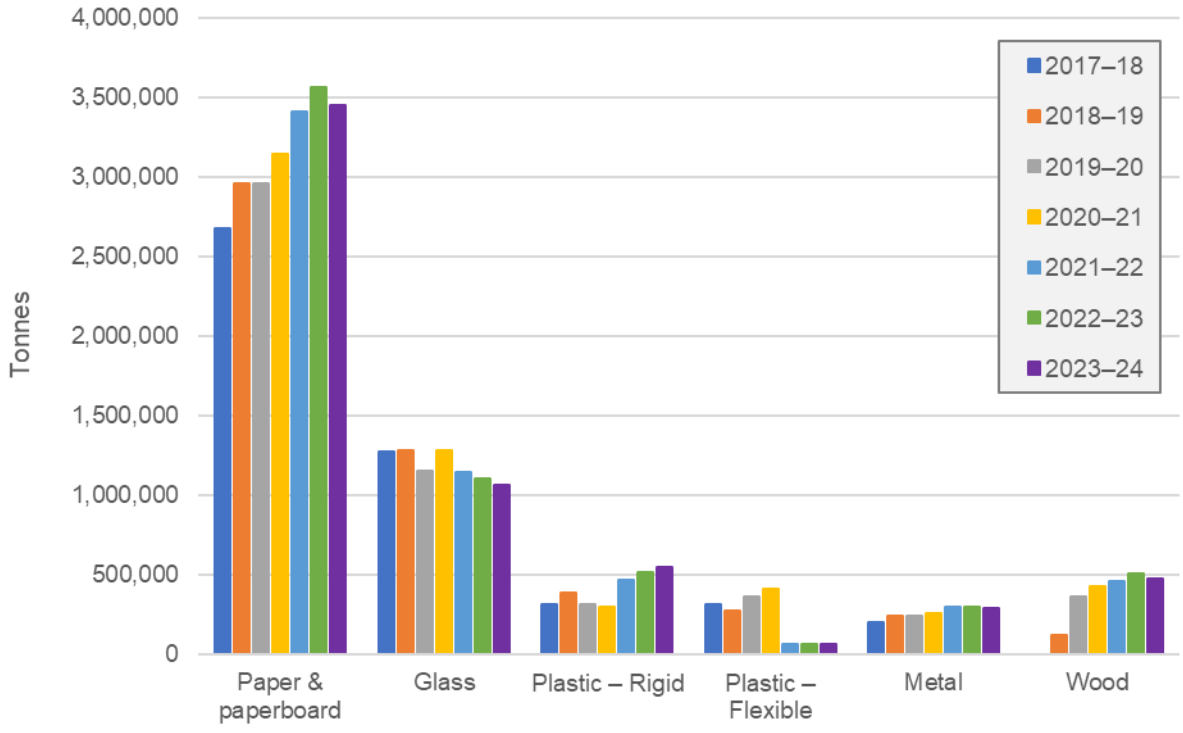

Figure 10 – Packaging POM with a 'good recycling potential' classification from 2017–18 to 2023–24, by material group.

2.5 Reprocessing capacity

Table 12 and **Figure 11** compare the projections of packaging POM and local reprocessing capacity across 2023–24 to 2028–29, by material group.

Total packaging POM is projected to increase from 6.84 million tonnes in 2023–24 to 8.25 million tonnes in 2028–29, which is a compound annual growth rate (CAGR) of 3.8%/yr. Total local packaging reprocessing capacity is projected to increase from 3.58 million tonnes in 2023–24 to 4.68 million tonnes in 2028–29, which is a CAGR of 5.5%, so a significantly faster growth rate than packaging POM growth.

In 2023–24, total local reprocessing capacity was estimated to be 52% of total packaging POM. By 2028–29, capacity is projected to be 57% of packaging POM.

Glass, plastic and paper & paperboard packaging will see local capacity growth across the next few years. Relative to 2023–24, significant increases by 2028–29 are expected to be:

- Flexible plastic packaging capacity up by 382 kt/yr. Note that this significant growth mostly relates to growth in chemical recycling and waste-to-energy capacity.
- Paper & paperboard packaging capacity up by 264 kt/yr.
- Glass packaging up by 352 kt/yr
- Rigid plastic packaging up by 101 kt/yr.

Table 12 – Packaging POM and reprocessing capacity from 2023–24 to 2028–29, by material group.

Year	Parameter	Paper & paperboard	Glass	Plastic – Rigid	Plastic – Flexible	Metal	Wood	Total
		(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
2023–24	POM	3,693,000	1,063,000	748,000	521,000	289,000	523,000	6,837,000
2023–24	Capacity	1,649,000	1,246,000	322,000	35,000	4,000	327,000	3,583,000
2024–25	POM	3,826,000	1,117,000	778,000	535,000	298,000	543,000	7,096,000
2024–25	Capacity	1,649,000	1,271,000	339,000	59,000	5,000	327,000	3,649,000
2025–26	POM	3,964,000	1,173,000	809,000	550,000	306,000	564,000	7,366,000
2025–26	Capacity	1,649,000	1,321,000	407,000	290,000	5,000	329,000	4,002,000
2026–27	POM	4,107,000	1,232,000	843,000	566,000	315,000	586,000	7,648,000
2026–27	Capacity	1,913,000	1,521,000	418,000	371,000	5,000	329,000	4,557,000
2027–28	POM	4,255,000	1,293,000	880,000	581,000	324,000	608,000	7,942,000
2027–28	Capacity	1,913,000	1,531,000	418,000	403,000	5,000	329,000	4,599,000
2028–29	POM	4,409,000	1,358,000	919,000	598,000	333,000	632,000	8,249,000
2028–29	Capacity	1,913,000	1,598,000	423,000	417,000	5,000	329,000	4,684,000
5-yr CAGR	POM	**3.6%**	**5.0%**	**4.2%**	**2.8%**	**2.9%**	**3.9%**	**3.8%**
5-yr CAGR	Capacity	**3.0%**	**5.1%**	**5.6%**	**64.1%**	**4.6%**	**0.1%**	**5.5%**

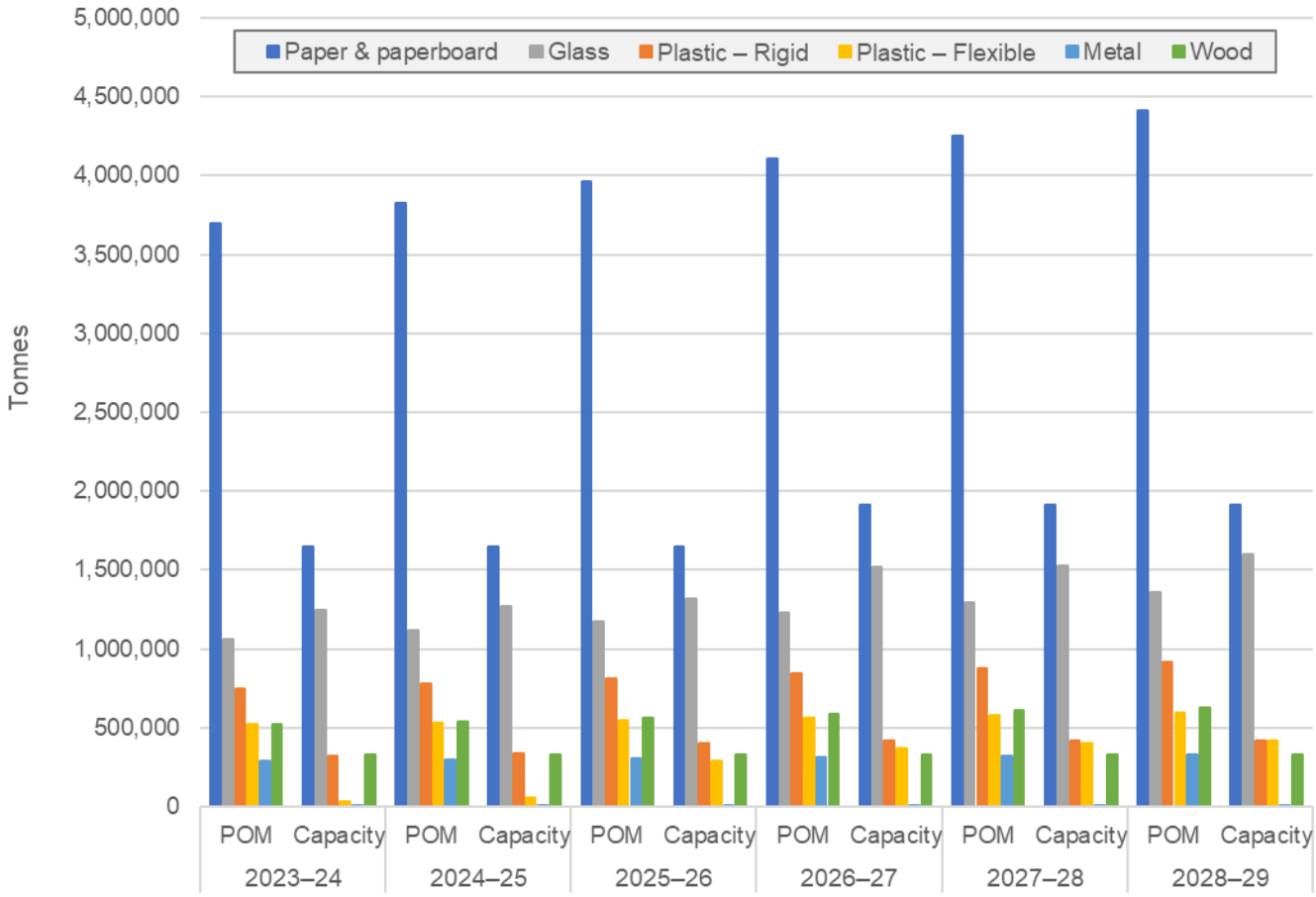

Figure 11 – Packaging POM and reprocessing capacity from 2023–24 to 2028–29, by material group.

3 Trends and insights

3.1 Overview

Packaging systems continue to evolve globally with a growing focus on reducing environmental impacts and embracing circular economy principles. End-of-life packaging management continues to be a priority area with increased regulation of packaging waste and global commitments to reduce the environmental impacts of packaging, and promote the use of recyclable and biodegradable materials.

Broad trends in improving the environmental performance of packaging include:

- Increasing use of recycled content.
- Efforts by many brand-owners and packaging manufacturers in redesigning packaging for improved recycling potential (e.g. through material changes and reduced material complexity).
- Increasing interest in reusable and refillable systems.

There are also ongoing trends and innovation in packaging materials such as biodegradable and compostable materials like certified compostable plastics, and seaweed and mushroom based (mycelium) packaging.

The Australian Government, supported by states and territories, continues to implement policies and programs intended to address packaging waste and drive broader system changes, including:

- Export restrictions since 2021 that encourage domestic recycling and processing, including restrictions and increased regulation on the export of waste glass, plastic, paper and cardboard.
- Funding to address infrastructure gaps through the *Recycling Modernisation Fund*.
- Steps to phase out many problematic and unnecessary single-use plastic items by most states and territories.
- The development of the *ReMade in Australia* scheme, which is Australia's new dedicated 'recycled content' brand, and is intended to drive demand in recycled content products and packaging.
- The development of a *National Framework for Recycled Content Traceability*, which aims to improve industry and consumer trust in recycled materials, and support growth in end-market demand for recycled content packaging and products.
- Ongoing policy work, mainly by state governments, on harmonisation of kerbside collection and container deposit schemes (CDS) to improve the efficiency of packaging collection systems.
- Support for the development by industry of packaging related product stewardship initiatives, such as *Soft Plastics Stewardship Australia*.
- Strengthening and expanding government procurement policies to generate demand for recycled content goods.

Reform of packaging regulation aims to support Australia's transition to a circular economy for packaging and drive investment in better packaging design and recovery systems, with a focus on enhancing packaging design for recyclability, improving recyclability labelling and increasing recycled content in packaging.

A critical enabler of the top-down system-level changes outlined above is strong public support and engagement. Ongoing consumer information and education programs, such as the Australasian Recycling Label (ARL), require continual support by packaging stakeholders to ensure that system and policy reforms achieve the intended outcomes.

Released in August 2024, the *APCO 2030 Strategic Plan* (APCO, 2024b) sets out proposals to create economic incentives for material circularity and establish mechanisms to achieve National Packaging Targets. This plan includes a new membership fee model based on eco-modulation, which would provide an economic incentive for APCO members to reduce and improve their packaging.

Following consultation with members and stakeholders in early 2025, APCO is working to ensure the proposed industry-led EPR approach for packaging is practical, fair and fit for future implementation. Feedback from members also indicated that there must be greater certainty about future packaging regulation, and robust management of free riders.

The remainder of this section of the report provides commentary and supporting analysis on the trends in packaging consumption, recovery and recovery rates for each major packaging material.

3.2 Fibre packaging

Across the 6-year period of 2017–18 to 2023–24, fibre packaging POM had a compound annual growth rate (CAGR) of 4.1%/yr, compared with annual growth in the population of 1.4%/yr over the same period.

Provided in **Figure 12** is the available time-series data on fibre packaging POM and recovery quantities, and the recovery rate from 2017–18 to 2023–24. The recovery rate in 2023–24 was 66%, which had increased slightly from the 65% recovery rate estimated for 2022–23. However, the changes in POM and recovery in the 2023–24, and thus the recovery rate, are not considered significant and could be due to a degree of year-on-year reporting variability in the contributing data sources.

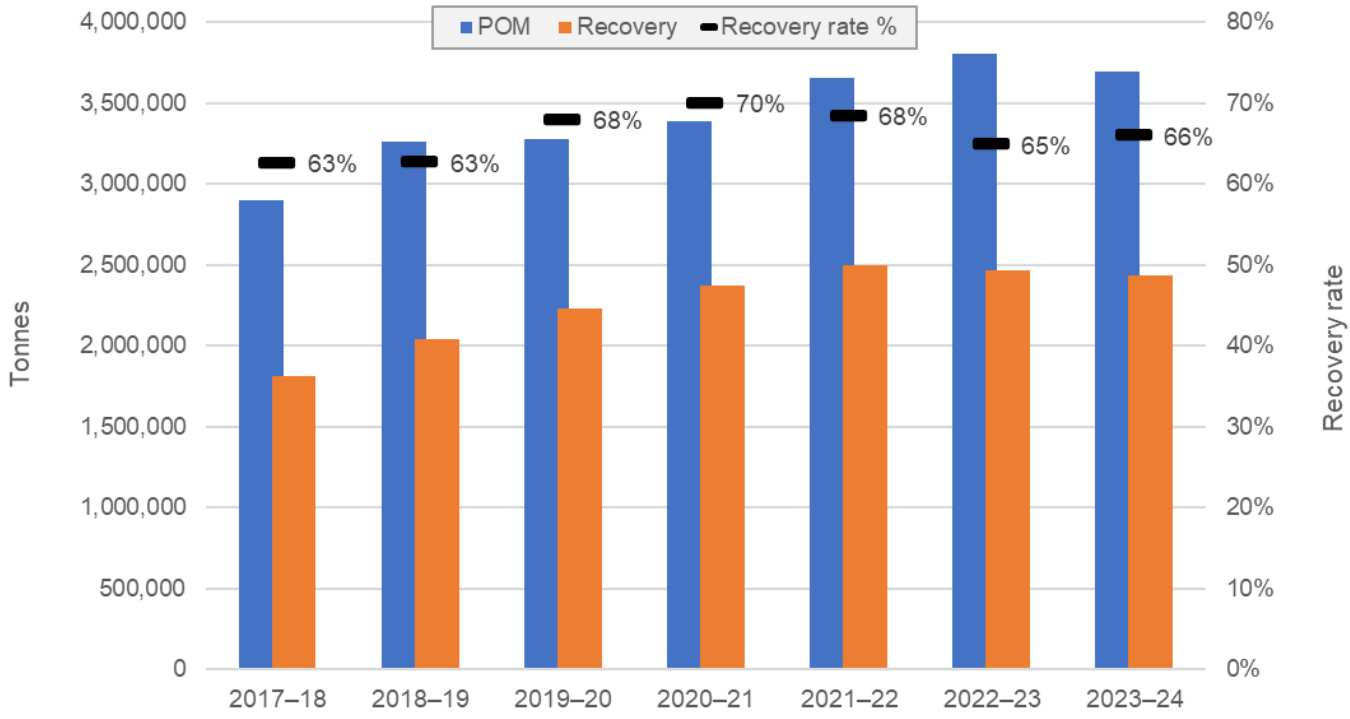

Figure 12 – Paper & paperboard packaging POM and recovery (mass basis), and recovery rate (% basis), from 2017–18 to 2023–24.

In mass terms, over the 6-year period, fibre packaging POM grew from 2,901 kt to 3,693 kt. This CAGR of 4.1%/yr was well above the CAGR for total packaging POM (excluding wood packaging) over the same period of 2.5%/yr. Wood packaging POM is excluded from the 6-year CAGR calculation as this data was not collected in 2017–18.

Across all fibre-based packaging there has been significant growth in imports of fully converted fibre packaging. In 2019–20 there were 117 kt of imports POM, and these are estimated to have reached 223 kt in 2023–24. These imports consist of a large number of relatively small transactions, with importers routinely ordering a single shipping container, or even less. This has potential consequences for fibre packaging recovery rates, as these small order formats, even though fibre-based, may be less compatible with Australian recovery systems.

These growth rates indicate that fibre packaging is generally gaining market share relative to glass and rigid plastic packaging (6-year CAGRs of -3.0% and 1.2% respectively). But is potentially losing market share to flexible plastic packaging and metal packaging (6-year CAGRs of 5.8% and 5.3% respectively). However, overall fibre packaging gained a significant increase in market share, increasing from 53% in 2017–18 to 58% in 2023–24 (excluding wood packaging).

Over the same 6-year period the CAGR in fibre packaging recovery was 5.0%/yr, which is higher than the annual growth rate POM (4.1%/yr). In mass terms, over the 6-year period fibre packaging recovery grew from 1,817 kt to 2,437 kt (+34%). This increase in recovery was mainly driven by increases in local reprocessing ultimately driven by demand for recovered fibre packaging, which grew by 52% (433 kt) over the 6-year period. This compares with export growth of 19% (187 kt) over the same period.

A significant driver for increased recovery of fibre packaging is growing domestic consumption of fibre-based packaging, which is increasing due to factors such as population growth and substitution away from other material groups in some packaging applications (e.g. from EPS to fibre-based void fill, and from plastic to paper shopping bags). Another driver has been the increasing proportion of recovered fibre used to replace domestically produced virgin fibre pulp.

The paper and paperboard sector is a long-established recycler, with the majority of facilities in Australia supplied entirely by domestically recovered material. As a mature industry, there are few opportunities for investment in new primary reprocessing facilities, where world scale commences at around 500 kt/yr of output.

In more detail, Australian supply of recovered fibre packaging and manufacturing of new corrugated packaging is almost entirely sufficient to meet local demand, so investment in new local mill capacity for local supply is unlikely for the foreseeable future. However, there are potential projects in the pipeline for local reprocessing of recovered fibre packaging for export.

The major recent investments, all of which relate to increasing local use of recovered fibre, include:

- Opal Australian Paper in Maryvale (Vic) – Conversion of a paper machine in 2022 from printing and communication paper to manufacture recycled grades of containerboard.
- Opal Fibre Packaging Australia in Wodonga (Vic) – New corrugating facility in 2023.
- Visy in Coolaroo (Vic) – Drum pulper installed in 2023 to increase throughput capacity and produce higher quality recovered fibre.
- Visy in Brisbane (Qld) – New corrugating facility in 2023.

In 2017–18 the average post-consumer recycled content of fibre packaging was 49%, with an estimated 1,421 kt of post-consumer recycled content incorporated into 2,901 kt of fibre packaging POM. In 2023–24 the post-consumer recycled content of fibre packaging had grown significantly to 55%, with 2,039 kt tonnes of post-consumer recycled content incorporated into 3,693 kt of fibre packaging POM.

Fibre packaging with a good recycling potential classification has increased from 92% in 2017–18 to 94% in 2023–24, compared with a packaging market average of 86% in 2023–24.

A large proportion of the fibre to meet local manufacturing demand comes from the substantial imports of manufactured goods of all types, most of which are delivered to Australia in corrugated boxes. In 2023–24 it is estimated that the quantity of corrugated packaging entering the Australian supply chain as imported filled packaging was around 1.5 million tonnes.

This creates a surplus of recovered fibre (most of which is itself manufactured from recycled fibre), which supplies local manufacturing sufficient to meet Australian needs, as well as significant exports of recovered paper and of finished recycled grades of paperboard.

Despite the growth in fibre packaging recovery, in mass terms the total fibre packaging disposed to landfill has also grown over the same period. In 2017–18 there was an estimated 1,083 kt of fibre packaging sent to disposal, compared with 1,256 kt in 2023–24.

Out to 2028–29, fibre packaging manufacturers estimate that fibre packaging POM will continue to grow at a rate that continues to be well above population growth, with a 5-year projected CAGR POM of 3.6%/yr across the 2023–24 to 2028–29 period. The projected annual population growth is 1.3%/yr over the same period.

Across the 5-year period of 2023–24 to 2028–29 fibre packaging reprocessing capacity is projected to increase at an CAGR of 3.0%/yr, increasing from 1,649 kt in 2023–24 to 1,913 kt in 2028–29.

Fibre packaging POM in 2028–29 is projected to be 4,409 kt, which means that the maximum possible local recovery rate would be 43% in 2028–29 at 100% utilisation of all reprocessing facilities projected to be in operation in 2028–29, and excluding export markets for unprocessed baled fibre packaging and local energy recovery related destinations.

A key development impacting export markets accessibility are the waste paper and cardboard export restrictions that came into force from 1 October 2024. The 4 investments outlined above relate to local reprocessors increasing capacity to accept lower grade feedstocks to supply local end-markets, and thus enabling the export of increased quantities of higher grade material (e.g. clean cardboard) for which export is allowed.

The degree of success of the local reprocessors in adjusting to the export restrictions will become clearer over the next 2–3 years. There are numerous local and overseas factors that will come into play, such as local and overseas demand, and the level of contamination of collected and sorted fibre packaging that is surplus to local mill demand.

3.3 Glass packaging

Provided in **Figure 13** is the available time-series data on glass packaging POM and recovery quantities, and the recovery rate from 2017–18 to 2023–24. The glass recovery rate has increased significantly in 2023–24 (80%) from the 2022–23 estimate (69%), driven by an increase in glass recovery, and a decrease in glass packaging POM.

This increased recovery is underpinned by expanding and maturing container deposit schemes nationally and increasing diversion of used packaging glass back into both new glass packaging and into non-packaging applications, with strong crushed aggregate, sand and high-value non-packaging end-markets in place.

The rollout of the fourth kerbside bin in Victoria for glass packaging only, likely also contributed to this strong increase in recovery. The Victorian Government announced the statewide introduction of separate glass collections from 2021, for full roll-out by all councils by 2027. As of June 2024, at least 13 Victorian councils had implemented separate glass collections.

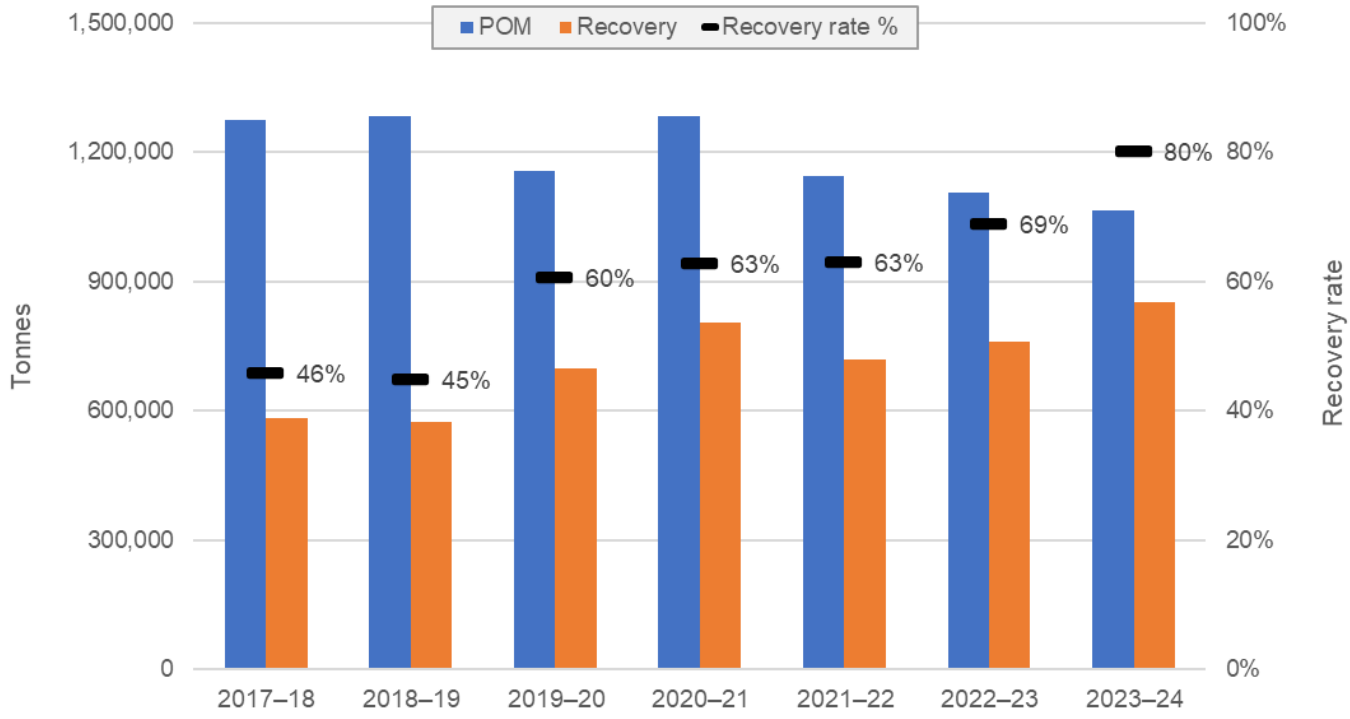

Figure 13 – Glass packaging POM and recovery (mass basis), and recovery rate (% basis), from 2017–18 to 2023–24.

In Australia, glass packaging continues to be mainly recovered via commingled recycling bins. As mentioned above, Victoria has continued to see the roll out of 'glass only' purple bins, due to be in place for all councils by 2027.

Across the 2018–19 to 2023–24 period, container deposit eligible glass packaging POM has increased from 319 kt to 492 kt (54% increase), and container deposit eligible glass packaging recovery has increased from 258 kt to 421 kt (63% increase). During 2023–24, the Victorian container deposit scheme came into operation, which contributed 42 kt (10%) to this increase in container deposit eligible glass recovery.

Further increases can be expected in 2024–25 due to the completion of the first full year of operation of the Victorian scheme (which started 1 November 2023), and the introduction of the Tasmanian scheme in May 2025. See Appendix E for more detail on container deposit scheme data across all the related packaging material types.

Glass beneficiation is an essential stage in returning used glass packaging material into new glass packaging. The used glass packaging is sorted (including colour sorting), cleaned, crushed and sized. The beneficiated glass is then defined as 'furnace-ready' cullet, which can then be used as an input into new glass packaging manufacturing.

Recovered glass that isn't sent to beneficiation, usually as it is surplus to new glass packaging manufacturing demand, is typically sent to glass crushers to be crushed into aggregate or sand for use in construction projects. In addition, glass fines rejected by beneficiation facilities can be supplied to glass crushers for processing into construction products.

Glass beneficiation capacity has seen significant growth in the past two years, particularly in southeastern Australia, with two significant projects beginning operation. These were a new South Australia facility in October 2022, and an upgraded Victorian facility in February 2024. In more detail, the publicly available information on these facilities is:

- Orora's glass beneficiation facility in Gawler, South Australia commenced operations in October 2022 with capacity to process 100–150 kt/yr
- Visy expanded its Laverton, Victoria based beneficiation facility, by an additional 100–200 kt/yr (approximately doubling capacity). Operating since February 2024, this facility can optically sort glass down to 3 mm in size. The resulting cullet will be used by the glass packaging manufacture plant in Spotswood (Victoria) in support of Visy's public target of an average of 70% recycled content in new glass packaging.

The impact of the facilities is evident in the 2023–24 reporting cycle through the increased glass packaging recovery rate.

The growth in beneficiation capacity may address the supply–demand imbalance of recent years, although the constrained bottle-to-bottle recycling market in Australia, with only five glass packaging manufacturing facilities will also play a role in the market.

Industry also continues to push up the post-consumer recycled content in glass packaging. The post-consumer recycled content of locally manufactured packaging glass increased from 32% in 2017–18 to an average of 54% in 2023–24, supporting demand for clean recovered glass and reducing the use of virgin material in new glass packaging.

The impact of these additional facilities is expected to provide sufficient capacity for the quantity of container deposit eligible glass POM nationally over the next 5 years. However, this is not the only reprocessing destination and end-market for CD eligible glass (and MRF sorted glass). The use of crushed glass as an aggregate or sand replacement is also growing, but more slowly than the return of recovered glass back into new packaging.

Nationally, it is generally the more contaminated glass collected through MRFs that continues to be destined for road construction or landfill remediation, as container deposit sourced glass is preferred for beneficiation and new packaging manufacture.

However, in regional areas, or jurisdictions not serviced by local beneficiation facilities, container deposit sourced glass is also often crushed for local use, due to the prohibitive cost of transporting the glass to beneficiation facilities that are hundreds or thousands of kilometres away. This can provide a viable recovery alternative, and increase recovery rates, where access to beneficiation is restricted by transport cost.

There are a number of high-value alternative products able to be manufactured from recovered packaging glass, including reject glass generated by beneficiation facilities. Used packaging glass material into fertiliser products is an example of a high value product, as is powdered glass into insulation and sand into filter medium. For non-vertically integrated MRF operators, even in metro areas, the crushed glass market may yield better returns than sending to beneficiation facilities to produce furnace ready glass cullet, providing an alternative viable market.

3.4 Rigid plastic packaging

Provided in **Figure 14** is the available time-series data on rigid plastic packaging POM and recovery quantities, and the recovery rate from 2017–18 to 2023–24. The rigid plastic packaging recovery rate was 28% in 2023–2, which is unchanged since 2021–22.

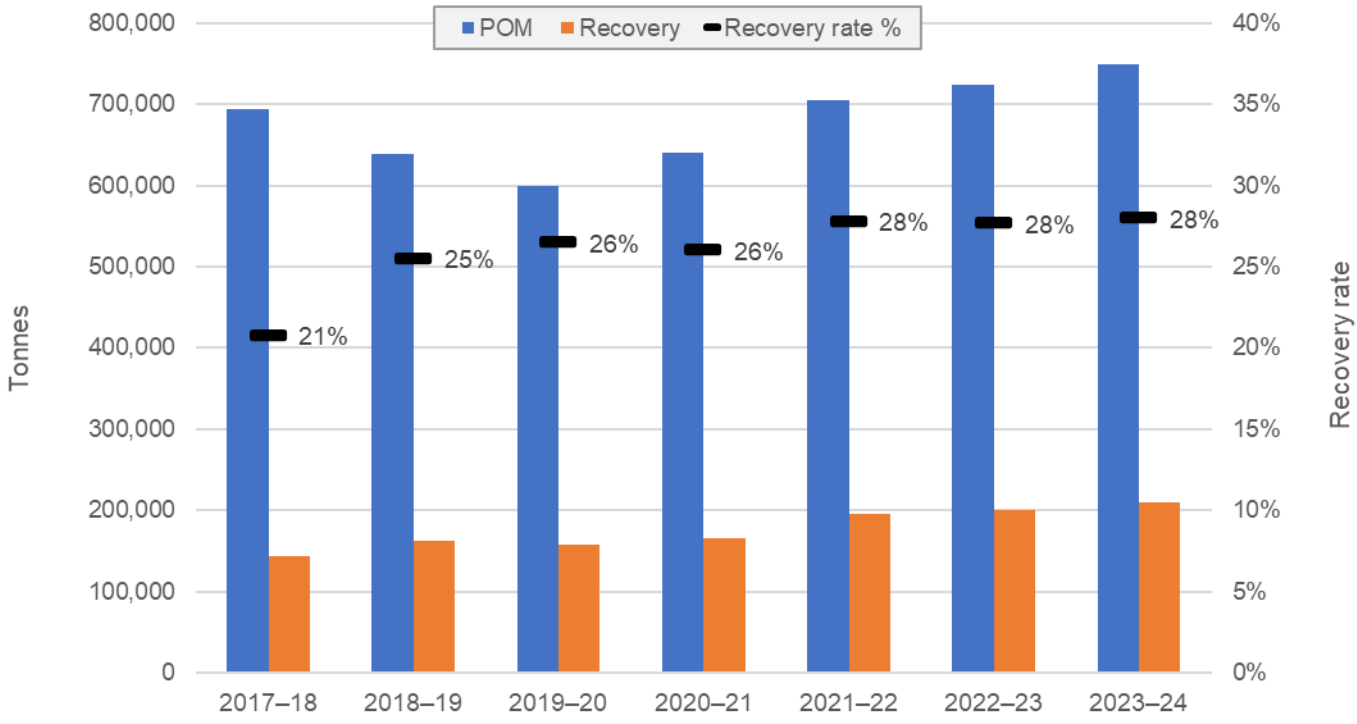

Figure 14 – Rigid plastic packaging POM and recovery (mass basis), and recovery rate (% basis), from 2017–18 to 2023–24.

In 2023–24 rigid plastic packaging POM was estimated at 748 kt. This quantity includes an estimate of plastic packaging POM for which the rigidity classification was unknown, but was likely rigid. This compares with an estimated 724 kt of rigid plastic packaging POM in 2022–23, which is around a 3% increase in consumption.

With respect to rigid plastic packaging recovery, during 2023–24 the recovery of rigid plastic achieved was 211 kt, which is a 5% increase on the 200 kt recovered in 2022–23.

Rigid plastic recovery rates have flatlined at 28% for the past three years, despite improvements in packaging design and material selection. And while recovered quantities are increasing, rigid plastic packaging POM is also growing at around the same rate. This potentially indicates that reprocessing capacity and end-market pull-through are becoming under-developed relative to the availability of rigid plastic packaging with good recycling potential.

Over the 6 years of available data the percentage of rigid plastic packaging with good recycling potential has increased from 45% in 2017–18 to 73% in 2023–24. For the foreseeable future it is anticipated that there will be further gradual increases in the good recycling potential of rigid plastic packaging, due to continual improvements in rigid plastic packaging design and material selection.

The post-consumer recycled (PCR) content of rigid plastic packaging was 16% in 2023–24, up from 14% in 2022–23, and 6% in 2018–19. As recovery and POM have been growing at a similar rate over the last 3 years, it seems likely that the PCR content of rigid plastic packaging will continue to only slowly increase for the foreseeable future, without significant external intervention in the market.

3.5 Flexible plastic packaging

In 2023–24 flexible plastic packaging POM was estimated at 521 kt. This quantity includes an estimate of plastic packaging POM for which the rigidity classification was unknown but was likely flexible. This compares with an estimated 541 kt of flexible plastic packaging POM in 2022–23, which is an apparent 4% decrease in consumption.

The reasons for this small (apparent) fall in flexible plastic packaging POM in 2023–24 are possibly a combination of the following factors:

- Over the last couple of years a significant proportion of shopping bags have transitioned from plastic to fibre.
- Incremental levels of elimination and lightweighting are occurring.
- General year-on-year data reporting volatility.

Flexible plastic packaging recovery during 2023–24, was 45 kt, which is an improvement on the 34 kt recovered in 2022–23. This increase was mainly due to strong growth in LDPE wrap recovery to 36 kt, compared with 29 kt in 2022–23. The growth is mostly B2B LDPE pallet wrap, along with some agricultural packaging film.

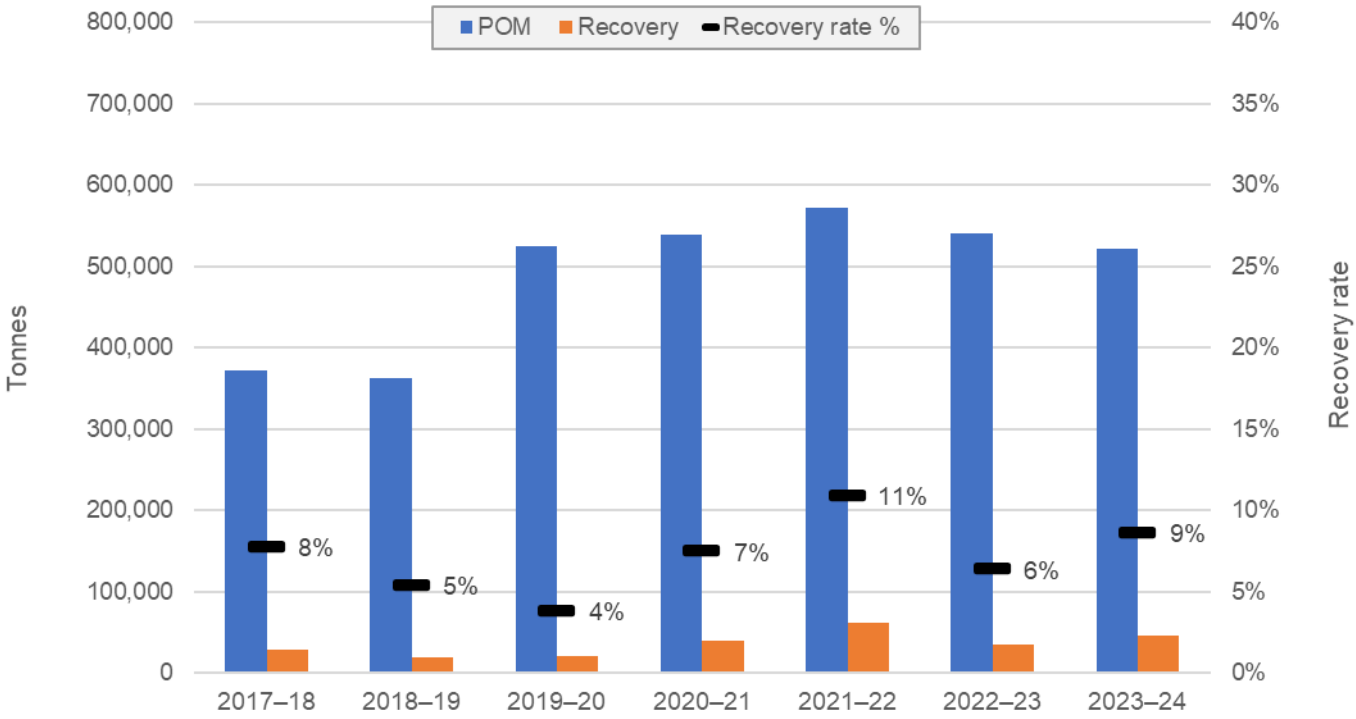

Figure 15 – Flexible plastic packaging POM and recovery (mass basis), and recovery rate (% basis), from 2017–18 to 2023–24.

The recovery of B2C flexible plastic packaging appears to have held fairly steady (but at very low level of around 3 kt) in 2023–24 relative to 2022–23. Noting that there was a significant fall in recovery between 2020–21 and 2021–22, following the collapse of the REDcycle B2C flexible plastic packaging collection scheme in November 2022.

Recovery rates for B2C flexible plastic packaging are likely to improve in the next 2–3 years due to significant developments underway in collection and sorting systems, reprocessing capacity, and end-market availability.

However, until these improvements occur, many forms of flexible plastic packaging will not achieve the classification of ‘good recycling potential’, even if technically recyclable by design.

3.6 Metal packaging

Metal packaging makes up the smallest proportion of packaging POM at only 4.2% (289 kt) of all packaging POM.

Provided in **Figure 16** is the available time-series data on metal packaging POM and recovery quantities, and the recovery rate from 2017–18 to 2023–24.

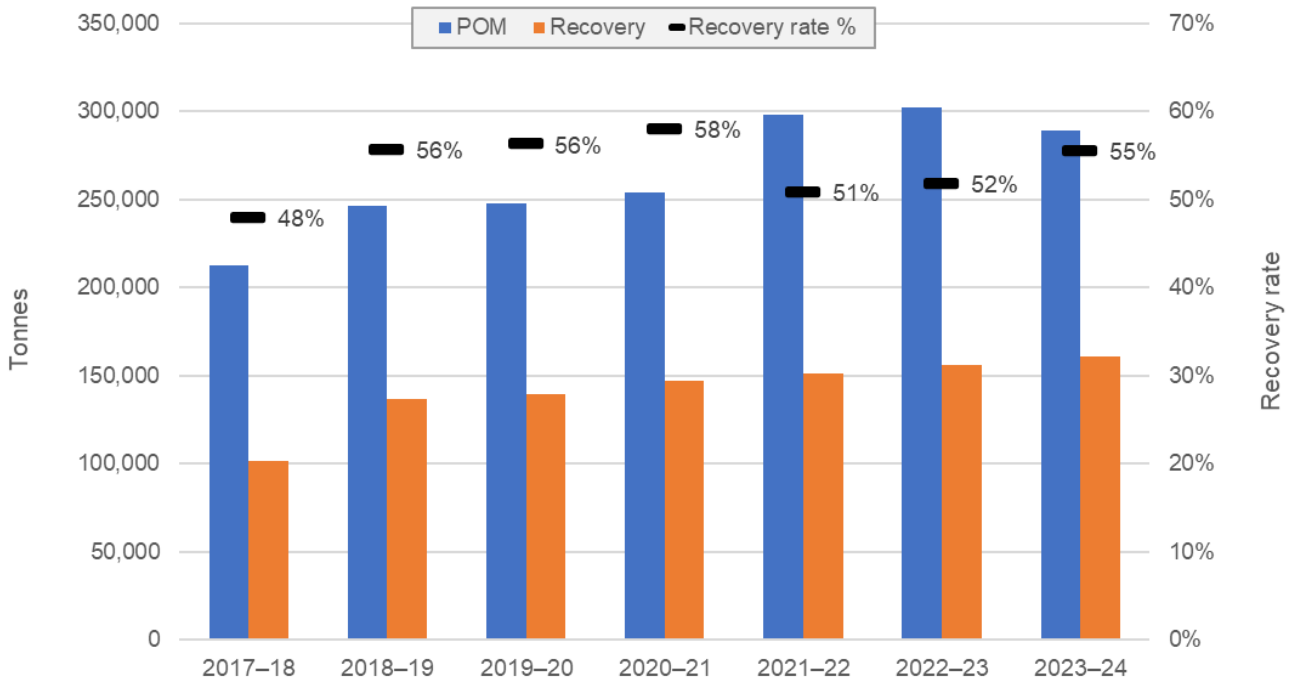

Figure 16 – Metal packaging POM and recovery (mass basis), and recovery rate (% basis), from 2017–18 to 2023–24.

In Australia there are 5–6 companies that produce the majority of B2C and B2B can packaging. Small quantities of empty cans (5%) are imported for local filling.

From the 2017–18 to the 2023–24 period metal packaging POM has increased from 213 kt to 289 kt (36% increase). Recovery rates have also increased in that time, albeit with some year-to-year fluctuations. In 2023–24 the recovery rate was 55%, compared to 52% in 2022–23.

In Australia metal packaging is mainly recovered via commingled recycling bins and container deposit or business drum collection schemes. Metal packaging consumption is dominated by cans (89%) and barrels or drums at 9%. Tin-plate steel and aluminium are the main types of metal used for production of the cans.

Recovered tin-plate steel packaging is considered a low value form of scrap steel and is not purchased by local smelter operators in any notable quantity and is almost entirely exported for smelting.

In comparison aluminium (especially used aluminium beverage cans) is a high value product and highly recyclable, provided it is not heavily contaminated. However, used aluminium packaging is also almost entirely exported for overseas processing as well.

A significant point of difference to other packaging types is that almost all recovered metal packaging is sold into export markets. This is due to a combination of lack of interest in this material by local smelter operators, and the availability of deep export markets. Generally steel and aluminium packaging is recycled back into the respective post-consumer metal pools to go into durable applications such as vehicles, building materials and many other products. Little is specifically purchased for smelting back into packaging sheet grades.

The post-consumer recycled content incorporated into metal packaging is relatively low at approximately 12% in 2023–24. The post-consumer recycled content in beverage aluminium and tin-plate steel are estimated at 21% and 6% respectively. This is lower than what is reported as 'easily achievable' (achievable without major redesign or manufacturing equipment upgrades) use of post-consumer recycled content, which are estimated to be 45% and 78% respectively.

Metal packaging reprocessing capacity projections cannot be determined, due to almost all metal packaging being exported, and there being no reported significant local (Australian) initiatives to increase the local reprocessing of either aluminium or tin-plate steel packaging.

There have been limited scale pilots accepting aluminium can scrap into two local smelters. However, these appear unlikely to scale up in the medium to longer term. Export markets remain strong, although could be vulnerable to any future supply chain disruptions that result from global events, as was observed during the height of the COVID-19 pandemic.

Unlike tin-plated steel packaging, the local reprocessing capacity for mild steel packaging (e.g. 205 L drums) is unconstrained relative to the quantities of end-of-life drums requiring reprocessing.

3.7 Wood packaging

Most timber packaging is pallets, but includes crates, cases and other packaging formats. Pallets are unusual as they are routinely supplied through proprietary pool systems, with individual pallets tracked through users (who pay rental charges) and including recovery and repair activities, so are an excellent example of a reusable packaging system.

Provided in **Figure 17** is the available time-series data on wood packaging POM and recovery quantities, and the recovery rate from 2019–20 to 2023–24.

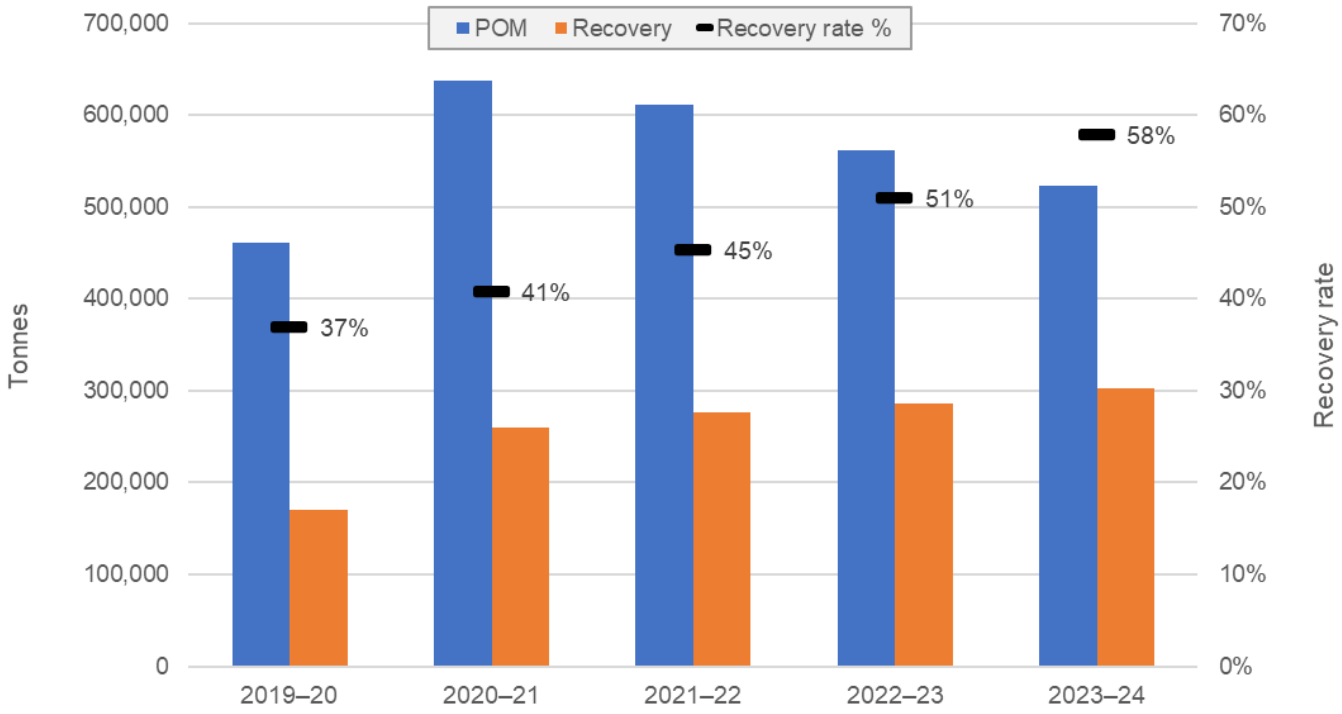

Figure 17 – Wood packaging POM and recovery (mass basis), and recovery rate (% basis), from 2019–20 to 2022–23.

Across the 2020–21 to 2023–24 period wood packaging POM has decreased from 638 kt to 523 kt (18% decrease). As noted, timber pallets are the majority of wood packaging, making up 497 kt in 2023–24. Factors influencing pallet material trends are discussed below.

Hardwood pallets are typically stronger, more durable and easier to repair than softwood pallets, but they are heavier. Hardwood pallets are more likely to be used for heavier loads, over longer road distances, while softwood pallets are more likely to be used for international trade.

There has been reducing supply of locally available hardwood over recent years, largely due to states enacting native forest logging bans. As a response local hardwood pallet manufacturers have increased imports of timber, pallet components and finished pallets across 2023 and 2024, with most being imported from south-east Asia.

Potentially the greatest change emerging in the market for timber packaging is the trend towards ‘single-use’ pallets. Though some are manufactured locally, the largest supply of these pallets comes from international shipments, landed in Australia in shipping containers, as packaging for imported goods.

These light-weight and often lower quality pallets are designed to be single use, are often constructed of two or more types of timber in the same pallet (solid sawn wood and fibreboard), and are delivered straight from the shipping container to individual customers.

This broad distribution results in them being spread across the country, in relatively small numbers at individual locations, with little or no prospect of them being recovered for re-use or recycling due to the fibreboard content.

End-of-life recovery of wood-based packaging is increasing, with end-markets including mulches and the manufacture of wood panels (especially particleboard) that are typically used in the Australian built environment.

Some single-use pallets and other timber packaging material is recovered for energy production, including for cement kilns and other energy from waste facilities nationally. These facilities can utilise fibreboard based timber packaging that cannot be mulch or composted.

Australian harvested hardwood timber supply for all applications (not just pallets) is anticipated to decline by around 60% by the end of 2025, with softwood timber supply increasing by less than 10% (IndustryEdge, 2025). And while it is likely that there will be significantly increased imports of timber for manufacturing reusable pallets locally, it is also anticipated that there will be strong growth in the manufacturing of plastic, aluminium and steel pallets or slipsheets.

The major challenge that must be overcome to increase the recovery rate of wood packaging is responding to the emergence of single use pallets through collection, sorting and reprocessing pathways or policy settings that support reuse.

4 Packaging reuse

4.1 Introduction

This year, flows of eight reusable packaging systems have been quantified, which are the same systems as those quantified in 2022–23. This is a continuation of the 2018–19 pilot exercise, working towards fully incorporating reusable packaging flows into the core consumption and recovery dataset, along with the appropriate metrics to measure comparative flows of reusable and single-use packaging systems.

This is a complex measurement that requires more research on the most appropriate methodology. Refer to **Appendix B** for more detail on the reusable packaging systems quantification method.

The reusable packaging systems POM and recovery data quantified in this section of the report are also incorporated into the packaging flows data in the previous sections of this report.

4.2 Reusable packaging system flows

Estimates of reusable packaging system flows in 2023–24 are provided in **Table 13** and **Figure 18**. Reusable timber pallets dominated the material flows for the quantified systems, across inputs (new pallets into use), pool size and outputs (end-of-life pallets leaving the pool).

After timber pallets, plastic pallets had the largest pool size, followed by drums, RPCs, IBCs and beer kegs.

Table 13 – Reusable packaging system flows in 2023–24.

Packaging system	Input flow		Pool size[a]		Output flow	
	(tonnes)	('000 units)	(tonnes)	('000 units)	(tonnes)	('000 units)
Beer kegs	900	80	19,800	1,690	200	20
Drums (200–205 L)	12,700	680	34,000	1,700	12,700	680
Rigid IBCs	5,900	350	10,300	550	8,000	460
Reusable plastic pallets	4,500	160	203,800	5,290	4,500	160
Reusable timber pallets	217,700	6,180	2,377,700	61,760	217,700	6,180
Dairy crates	1,100	990	11,400	9,850	1,100	990
RPCs	5,600	3,750	229,500	153,010	5,600	3,750
Reusable HDPE bags	8,600	581,330	500	33,540	8,600	581,330
Reusable LDPE bags	9,500	335,010	1,200	83,750	9,500	335,010
Reusable PP bags	1,300	12,170	400	24,350	1,300	12,170
Cups/mugs	700	3,560	1,400	15,800	700	3,560
Total	**268,500**	**944,200**	**2,890,000**	**391,300**	**269,900**	**944,300**

a) Estimated pool size at 30 June 2024.

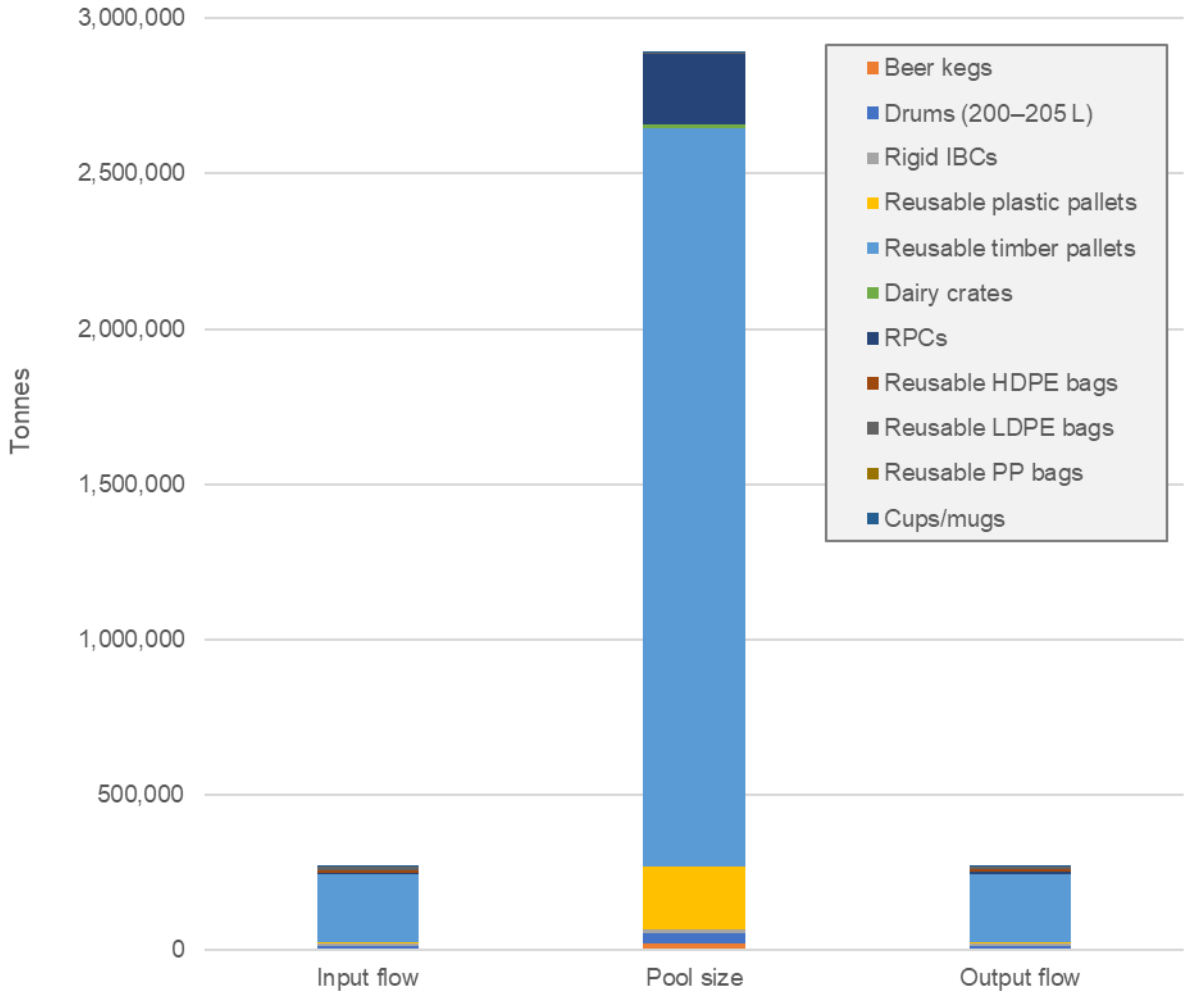

Figure 18 – Reusable packaging system flows in 2023–24.

Reusable packaging system inputs in 2023–24, by material group, are provided in **Table 14** and **Figure 19**. Wood was the most significant material input into the quantified systems, making up 79% of total inputs. Plastic made up 13% and metal contributed 8%.

Table 14 – Reusable packaging input flows in 2023–24, by packaging system and material group.

Packaging system	Paper & paperboard	Glass	Plastic	Metal	Wood	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Beer kegs	0	0	0	900	0	**900**
Drums (200–205 L)	0	0	700	12,000	0	**12,700**
Rigid IBCs	0	0	2,100	3,800	0	**5,900**
Reusable plastic pallets	0	0	4,500	0	0	**4,500**
Reusable timber pallets	0	0	0	5,400	212,200	**217,700**
Dairy crates	0	0	1,100	0	0	**1,100**
RPCs	0	0	5,600	0	0	**5,600**
Reusable HDPE bags	0	0	8,600	0	0	**8,600**
Reusable LDPE bags	0	0	9,500	0	0	**9,500**
Reusable PP bags	0	0	1,300	0	0	**1,300**
Cups/mugs	0	400	200	100	0	**700**
Total (tonnes)	**0**	**400**	**33,700**	**22,200**	**212,200**	**268,500**
Total (%)	**0.0%**	**0.1%**	**12.5%**	**8.3%**	**79.0%**	**100.0%**

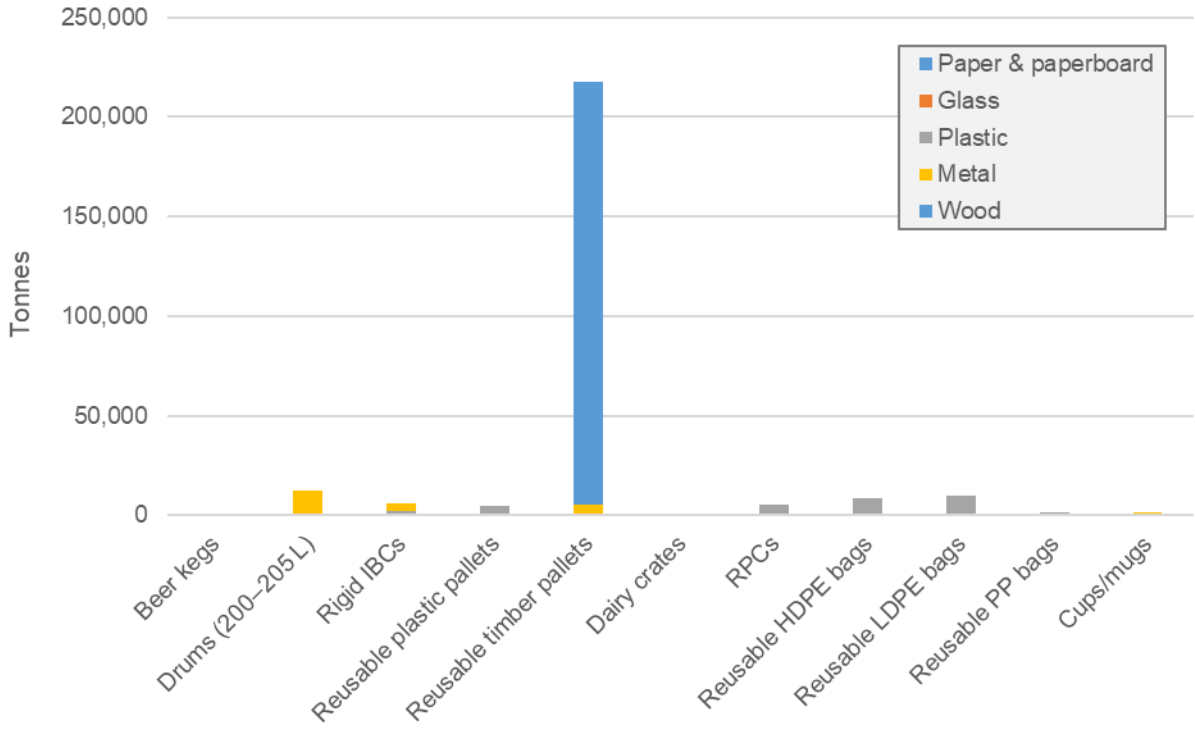

Figure 19 – Reusable packaging input flows in 2023–24, by packaging system and material group.

Reusable packaging system outputs in 2023–24, by end-of-life destination, are provided in **Table 15** and **Figure 20**. The most significant destination was 163 kt of timber pallets to mulching or composting, which was 60% of total output flows.

Overall diversion of outputs to recovery fates was 70%, reflecting the high rates of recovery that are achievable with (mostly) closed system reusable packaging flows.

Table 15 – Reusable packaging system end-of-life destinations in 2023–24.

Packaging system	Recycling	Composting	Landfill	System leakage	Other	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Beer kegs	100	0	0	80	100	**240**
Drums (200–205 L)	9,500	0	0	640	2,500	**12,720**
Rigid IBCs	7,800	0	200	0	0	**7,960**
Reusable plastic pallets	4,100	0	0	180	200	**4,480**
Reusable timber pallets	0	163,240	43,500	5,440	5,400	**217,660**
Dairy crates	1,000	0	0	110	0	**1,140**
RPCs	2,800	0	0	2,810	0	**5,620**
Reusable HDPE bags	300	0	8,300	0	0	**8,580**
Reusable LDPE bags	300	0	9,200	0	0	**9,530**
Reusable PP bags	0	0	1,200	0	0	**1,270**
Cups/mugs	0	0	700	0	0	**650**
Total (tonnes)	**25,900**	**163,240**	**63,100**	**9,260**	**8,200**	**269,900**
Total (%)	**10%**	**60%**	**23%**	**3.4%**	**3%**	**100%**

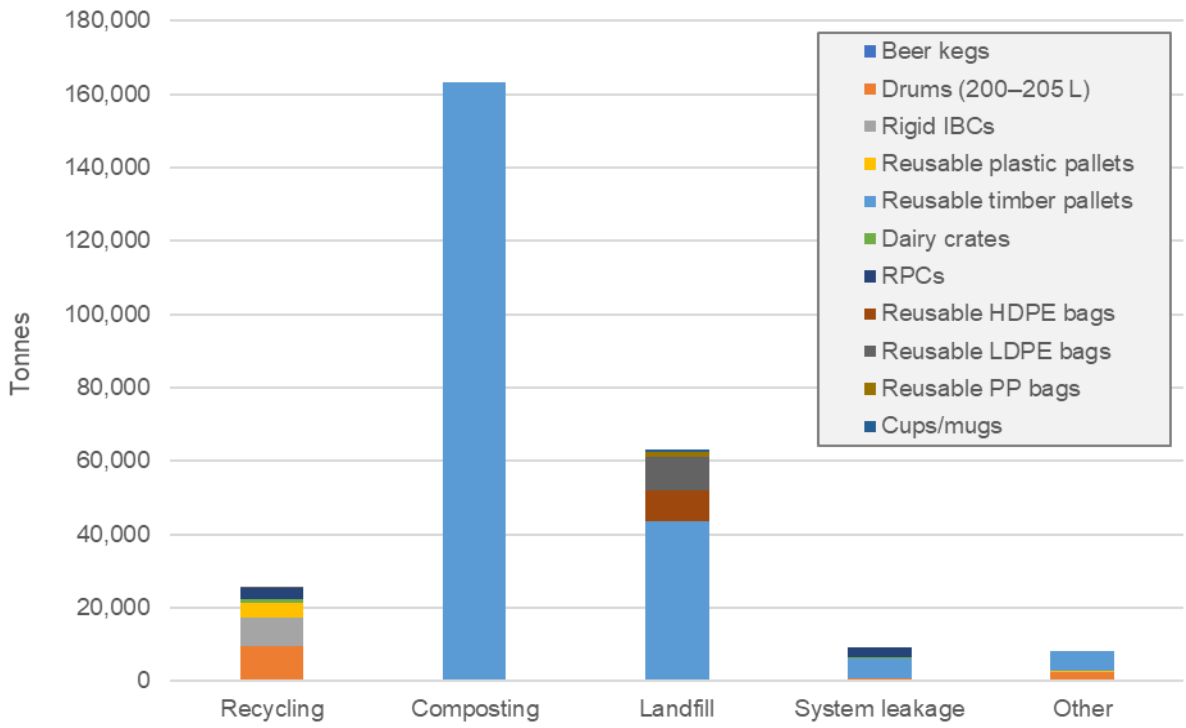

Figure 20 – Reusable packaging system end-of-life destinations in 2023–24.

4.3 Reusable packaging system use phase parameters

Provided in **Table 16** is a summary of significant use phase parameters for the quantified reusable packaging systems. Beer kegs, dairy crates, and RPCs in particular, have long lifespans coupled with relatively high rotations (use cycles) per year.

Table 16 – Reusable packaging system use phase parameters.

Packaging system	Average weight	Average lifespan	Rotations	Rotation time	Average deliverable volume
	(kg/unit)	(yr)	(rotations /life cycle)	(rotations/yr)	(litres/rotation)
Beer kegs	11.567	28	85	3.0	50
Drums (200–205 L)	16.279	3	3	1.0	200
Rigid IBCs	16.704	2	3	2.0	1,000
Reusable plastic pallets	28.150	10	50	5.0	1,000
Reusable timber pallets	36.250	10	37	3.7	1,000
Dairy crates	1.160	10	120	12.0	18
RPCs	1.500	10	140	14.0	10
Reusable HDPE bags	0.015	0	3	52.0	14
Reusable LDPE bags	0.028	0	3	12.0	14
Reusable PP bags	0.104	2	104	52.0	17
Cups/mugs	0.191	4	1,000	250.0	0
Simple average (unweighted)	**11.021**	**7**	**141**	**37.0**	**302**

4.4 Avoided single-use packaging

This section provides indicative estimates of the quantities of single-use packaging that are avoided by using the quantified reusable packaging systems.

The reusable packaging systems have differing levels of competition with the alternative single-use packaging systems. However, this substitutability aspect has been ignored for the purposes of this exercise, which was to determine the theoretical performance of reusable packaging systems relative to single-use packaging systems, in terms of the comparative material flows.

Provided in **Table 17** and **Figure 21** are estimates of the single-use packaging avoided by each reusable packaging rotation, by material group. IBCs avoided the most single-use packaging (the competing product was a single-use IBC), reflecting the importance of reusing IBCs wherever possible.

Table 17 – Single-use packaging avoided per reusable packaging rotation, by material group and packaging system.

Packaging system	Paper & paperboard	Glass	Plastic	Metal	Wood	Total
	(kg)	(kg)	(kg)	(kg)	(kg)	(kg)
Beer kegs	3.238	14.382	0.000	1.629	0.000	19.249
Drums (200–205 L)	0.000	0.000	0.989	7.069	0.000	8.058
Rigid IBCs	0.000	0.000	0.000	41.000	0.000	41.000
Reusable plastic pallets	0.000	0.000	0.000	0.000	20.000	20.000
Reusable timber pallets	0.000	0.000	0.000	0.000	20.000	20.000
Dairy crates	0.500	0.000	0.000	0.000	0.000	0.500
RPCs	0.435	0.000	0.009	0.000	0.000	0.444
Reusable HDPE bags	0.000	0.000	0.007	0.000	0.000	0.007
Reusable LDPE bags	0.000	0.000	0.007	0.000	0.000	0.007
Reusable PP bags	0.000	0.000	0.009	0.000	0.000	0.009
Cups/mugs	0.010	0.000	0.003	0.000	0.000	0.013

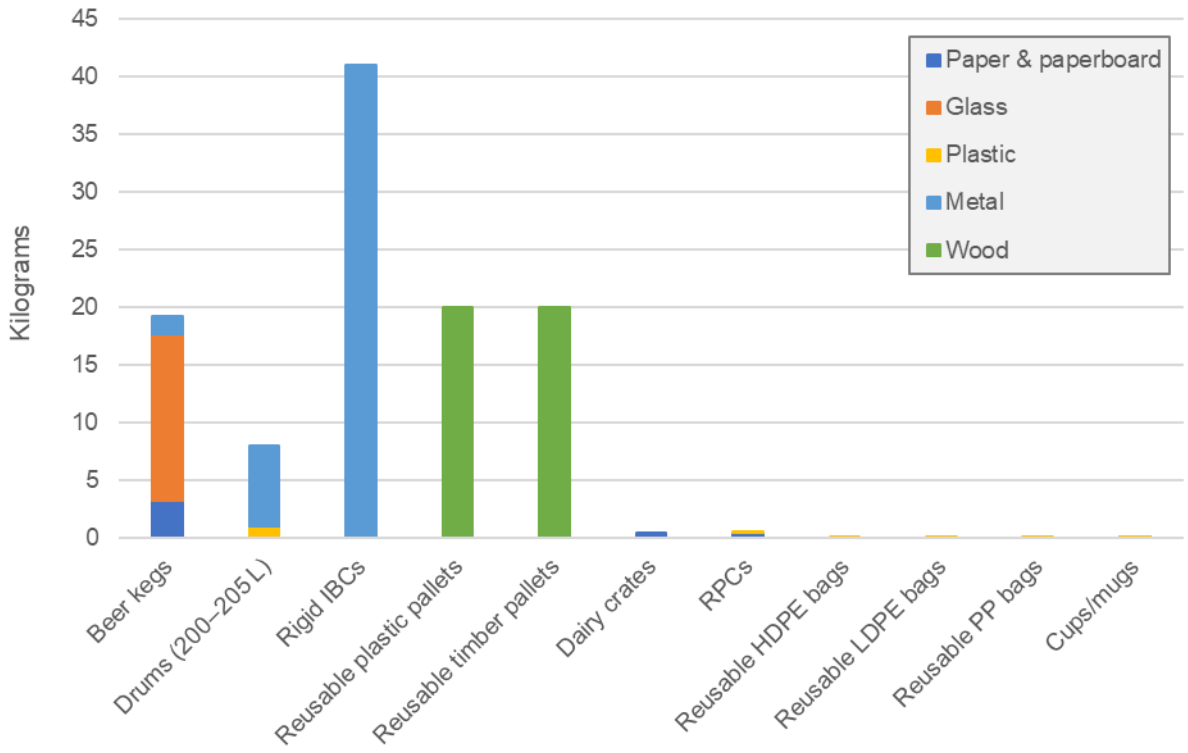

Figure 21 – Single-use packaging avoided per reusable packaging rotation, by material group and packaging system.

Provided in **Table 18** and **Figure 22** are estimates of the total quantities of single-use packaging avoided in 2023–24, through the use of the eight quantified reusable packaging systems.
The quantified reusable packaging systems avoided the use of an estimated 6.28 million tonnes of single-use packaging.

Approximately 80% of the avoided single-use packaging consumption benefit is provided by reusable pallets, and another 16% by RPCs and dairy crates. The net theoretical reduction in packaging use was 6.02 million tonnes, as there were 268 kt of reusable packaging inputs in 2023–24 (**Table 13**).

Table 18 – Total single-use packaging avoided in 2023–24 through use of the quantified reusable packaging systems.

Packaging system	Paper & paperboard	Glass	Plastic	Metal	Wood	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Beer kegs	16,400	72,700	0	8,200	0	97,300
Drums (200–205 L)	0	0	1,700	12,000	0	13,700
Rigid IBCs	0	0	0	44,800	0	44,800
Reusable plastic pallets	0	0	0	0	529,400	529,400
Reusable timber pallets	0	0	0	0	4,508,300	4,508,300
Dairy crates	59,100	0	0	0	0	59,100
RPCs	931,600	0	18,600	0	0	950,200
Reusable HDPE bags	0	0	12,700	0	0	12,700
Reusable LDPE bags	0	0	7,300	0	0	7,300
Reusable PP bags	0	0	11,200	0	0	11,200
Cups/mugs	38,700	0	11,500	0	0	50,200
Total (tonnes)	**1,045,800.0**	**72,700.0**	**62,900.0**	**65,100.0**	**5,037,700.0**	**6,284,200.0**
Total (%)	**16.6%**	**1.2%**	**1.0%**	**1.0%**	**80.2%**	**100.0%**

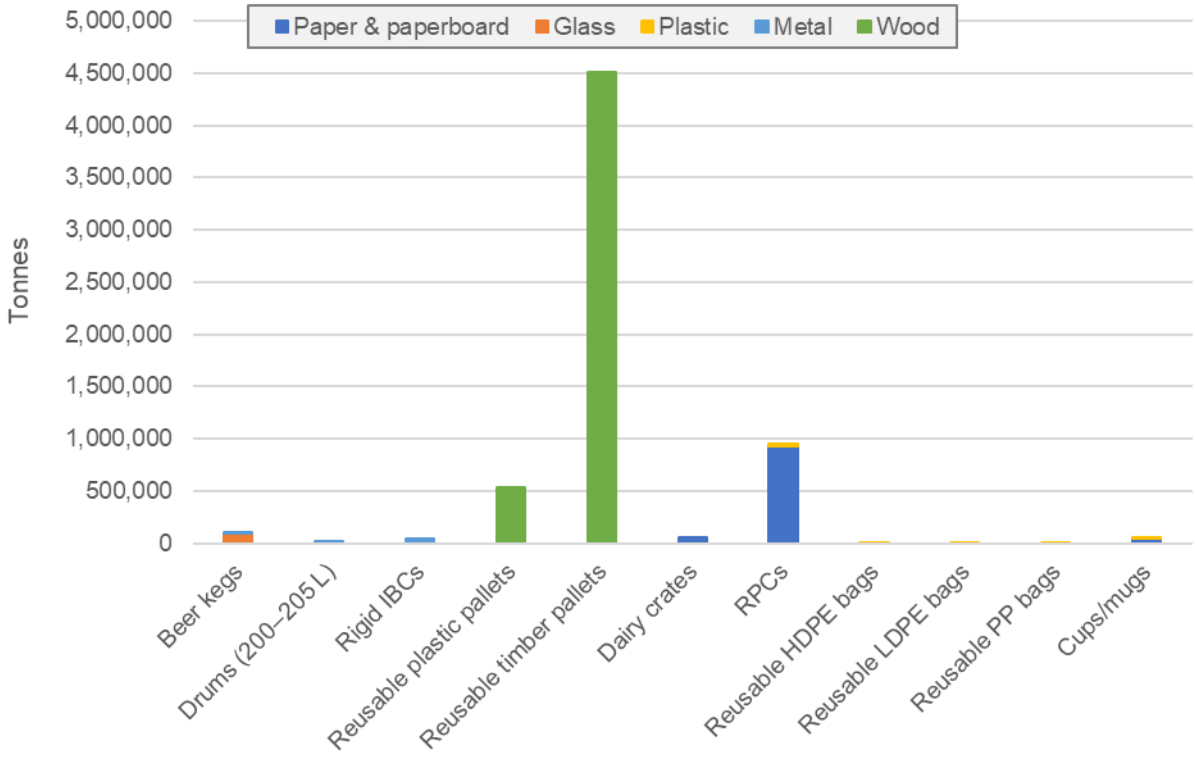

Figure 22 – Total single-use packaging avoided in 2023–24 through use of the quantified reusable packaging systems.

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Appendix A – Glossary of terms and abbreviations

Table A-1 – Glossary of terms and abbreviations.

Term	Definition
ARL	The Australasian Recycling Label program is a labelling system for Australia and New Zealand, that provides consumers with easy-to-understand recycling information on packaging. Also see the related 'PREP' entry.
Beneficiation (of glass)	Processing of used glass packaging. The beneficiation process includes sorting (including colour sorting), cleaning, crushing and sizing. Beneficiated glass is considered "furnace-ready" for sale to glass product manufacturers.
Biodegradable	A generic term that indicates a polymer is biologically available for microbial decomposition, with no detail on breakdown products, time or extent of degradation or end environments.
Bioplastics	Plastics that are biobased, biodegradable or both. Bioplastics fall into three broad groupings, which are: biobased (but not biodegradable); biodegradable (but not biobased); or biobased and biodegradable. Conventional polymers (e.g. PET and HDPE) can also be fully or partially 'biobased'.
Business-to-business (B2B) packaging	Packaging used for the containment, protection, or handling of product where the end-customer, prior to the packaging reaching end-of-life, is a business or institution. Typically includes the secondary and tertiary packaging that is used to move products between businesses prior to sale to end-consumers but can also include primary packaging if the business is the end-user. Same meaning as 'Commercial packaging'. Also see 'Packaging' and 'Business-to-consumer (B2C) packaging'.
Business-to-consumer (B2C) packaging	Packaging used for the containment, protection, marketing, or handling of product where the end-customer, prior to the packaging reaching end-of-life, is a consumer (i.e., a person). Includes the primary packaging that is sold to end-consumer, and possibly some secondary packaging, but excludes any B2B packaging that is part of the packaging system. Same meaning as 'Consumer packaging'. Also see 'Packaging' and 'Business-to-business (B2B) packaging'. B2C packaging can be split into two categories related to the location of used packaging generation, which are 'At home' and 'Away-from-home (AfH)'. At home packaging includes any packaging that is likely or known to be generated as used packaging at homes, and so will enter residential waste management systems. AfH packaging includes any packaging that is likely or known to be generated as used packaging in non-residential settings, and so will enter commercial waste management systems.
CAGR	See the 'Compound annual growth rate' entry.
Certified compostable	Means that claims of compliance with Australian Standard 4736-2006, compostable and biodegradable plastics – "Biodegradable plastics suitable for composting and other microbial treatment" and Australian Standard AS 5810-2010 Home Composting – "Biodegradable plastics suitable for home composting" have been verified.
Circular economy	The circular economy concept is a systems approach to material/energy flows that extends significantly on the 'waste hierarchy', with the objective being to decouple economic growth/development from the use of non-renewable resources (including energy). It is a concept that extends to cover the entire life cycle of products and services, including design. It assumes that the current approach of incremental and fractured improvements in materials and energy efficiency are not sufficient to achieve the potential (much larger) economic and environmental gains that are available.

Term	Definition
Closed-loop recycling	Material from a product system is recycled in the same product system and is of the same quality and functionality as the original material. In terms of end-of-life fates, closed-loop recycling will typically provide greatest environmental benefits, with the key attribute being the displacement (competition with) virgin resource extraction. Also see 'Open-loop recycling' and 'Downcycling'.
Collection	Packaging materials collected for recycling.
Collection efficiency	Materials collected for recycling divided by total packaging waste entering the collection system.
Commercial and industrial (C&I) waste	Solid inert waste generated from trade, commercial and industrial activities including the government sector. It includes waste from offices, manufacturing, factories, schools, universities, state and government operations and small to medium enterprises e.g. food waste.
Commercial packaging	The same meaning as 'Business-to-business' (B2B) packaging.
Commingled recyclables	Materials combined generally for the purposes of collection, mainly through municipal collection services. Includes plastic bottles, other plastics, paper, glass and metal containers. Commingled recyclable materials require sorting after collection before they can be reprocessed. Can also be called commingled materials.
Compostable packaging	A packaging or packaging component (1) is compostable if it is certified to AS4736 or a similar standard for commercial composting, and if its successful post-consumer (2) collection, (sorting), and composting is proven to work in practice and at scale (3). Also see the related ‘Recyclable packaging’ and ‘Reusable packaging’ definitions. Supporting notes: 1. ISO 18601:2013: A packaging component is a part of packaging that can be separated by hand or by using simple physical means (e.g. a cap, a lid and (non in-mould) labels). 2. ISO 14021 clarifies post-consumer material as material generated by households or by commercial, industrial and institutional facilities in their role as end users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain. 3. ‘At scale’ implies that there are significant and relevant geographical areas, as measured by population size, where the packaging is actually composted in practice.
Composted (packaging)	Packaging that underwent degradation by biological processes during composting to yield CO_2, water, inorganic compounds and biomass at a rate consistent with other known compostable materials and leaves no visible, distinguishable or toxic residue, in accordance with accepted industry standards (1). Supporting notes: 1. Accepted industry standards include standards referred in the above definitions ‘Compostable packaging – industrial’ and ‘Compostable packaging – home’. Reference to accepted industry standards is to ensure packaging can fully degrade within specified periods of time in the conditions of standard composting system and does not alter the quality of compost.
Compound annual growth rate (CAGR)	The CAGR is a term for the ratio that provides a constant rate of growth, each year, over a defined time period of two or more years. CAGR is equivalent to the more generic exponential growth rate when the exponential growth interval is one year. The CAGR is useful as it provides a smoothed rate of growth over a number of years, reducing the impact of year-on-year growth data volatility.

Term	Definition
Construction and demolition (C&D) waste	Solid inert waste generated from residential and commercial construction and demolition activities e.g. bricks and concrete.
Consumer packaging	Packaging used for the containment, protection, marketing, or handling of product where the end-customer, prior to the packaging reaching end-of-life, is a consumer (i.e., a person). Includes the primary packaging that is sold to end-consumer, and possibly some secondary packaging, but excludes any B2B packaging that is part of the packaging system. Same meaning as 'Business-to-consumer (B2C) packaging'. Also see 'Packaging' and 'Business-to-business (B2B) packaging'. It is worth noting that the *National Environment Protection (Used Packaging Materials) Measure 2011* (the NEPM) defines *consumer packaging* to mean all packaging products made of any material, or combination of materials, for the containment, protection, marketing, or handling of consumer products. This includes: • Primary packaging – materials directly containing the product. • Secondary packaging – materials used to contain single or multiple primary packed products. • Tertiary packaging – materials used to distribute packaged and unpackaged products. This NEPM definition for consumer packaging is different from that adopted for consumer packaging (and B2C packaging) in this study in that the adopted definition excludes all tertiary packaging, even if it is part of the (upstream) consumer packaging system.
Consumption	Total use of product by Australian industry and consumers. Includes locally made and used product, imported product and locally utilised recyclate. Does not include locally made product that is exported.
Consumption of packaging	Packaging put onto the market in Australia from local and imported sources. Because most packaging is single-use, it is assumed that packaging consumed equates to packaging waste generated. Does not include locally made product that is exported for sale.
Container deposit scheme (CDS) collection	Separate collection system for container deposit eligible glass, metal, paper and plastic containers.
Contaminants – Out throws	A sorted scrap (bale) related term. Recyclable materials that are unsuitable for inclusion in the sorted grade (product) in which they are present, but can be sorted, separated and/or removed easily during the recycling process. Out throws generally have significantly higher allowable thresholds, compared to prohibited materials, in bale specifications for sorted recycled material commodities. Also see 'Contaminants – Prohibited materials' entry.
Contaminants – Prohibited materials	A sorted scrap (bale) related term. Unrecyclable materials that are unsuitable for inclusion in the sorted grade (product) in which they are present, and cannot be sorted, separated and/or removed during the recycling process. Prohibited materials cause adverse impacts on end-products and may damage the recycling facilities. Prohibited materials generally have significantly lower allowable thresholds, compared to out throws, in bale specifications for sorted recycled material commodities. Also see 'Contaminants – Out throws' entry.
Converter	Company which converts material inputs into a finished packaging product (whether filled or unfilled).
Cullet	Sorted glass feedstock resulting from the beneficiation process of mixed container glass. Generally consists of sorted streams of amber, flint and green glass of particle size greater that 5–10 mm depending on the capacity of the beneficiation plant.
Delamination	The process of splitting a composite material into its component parts e.g. laminated glass.

Term	Definition
Disposal	Discarding solid waste to landfill or incineration (without energy recovery).
Diversion rate	Recovery (at a defined point) as a percentage of end-of-life disposal. Also see 'Recovery rate' and 'Recycling rate'.
Domestic	Material from domestic (household) sources.
Downcycling	Recycled material is of lower quality and functionality than the original material(s). Materials are recycled into different applications with less stringent performance specifications, and where the recycled materials are typically substituting for (competing with) materials other than the original high quality virgin materials. Examples of this include the recycling of mixed polymer rigid plastics, e.g. a mixture of HDPE, low-density polyethylene (LDPE) and polypropylene (PP) into timber substitute products (e.g. outdoor furniture, pallets and fencing), where the recovered plastics are competing primarily with timber as the alternative material. Down-cycled materials are potentially more difficult to recycle at end-of-life (although they often have long functional lifespans), and are more likely to be disposed to landfill at end-of-life. Also see 'Closed-loop recycling' and 'Open-loop recycling'.
Drop off centre/site	A facility where households can drop off selected materials and household items for recycling and reuse. Also called drop off facilities.
End user (of recycled content raw materials)	A user of raw materials that have a recycled content. Examples of end users include plastic product manufacturers that use recycled polymer in their products, or agricultural producers that purchased composted organics as a soil conditioner/fertiliser.
Energy from waste (EfW)	The terms ‘energy recovery from waste’, ‘waste to energy’ or ‘energy from waste’ can be used interchangeably to describe a number of treatment processes and technologies used to generate a usable form of energy from waste materials. Examples of usable forms of energy include electricity, heat and transport fuels.
Energy recovery	A waste fate in which a substantial portion of energy value in a waste is recovered.
Energy recovery facility	A facility that captures, on average, more than 20% of the embodied energy in the waste it receives for beneficial use.
Export for reprocessing	Material sent for reprocessing overseas.
Feedstock	Raw material used to manufacture products. Material varies depending on what is being produced.
Feedstock (chemical) recycling	The use of chemical processes such as pyrolysis to convert scrap plastics into a hydrocarbon gas or liquid (often a polymer to monomer conversion) that is usable as a fuel or as an input for manufacturing plastics resins.
Fines (glass)	Unsorted sub-5–10 mm glass material left over from the glass beneficiation process. It can contain contamination including plastics and small pieces of metals. These fines can be further processed to produce a glass sand product which has a number of uses.
Finished goods	Finished goods are goods that are ready to be consumed or distributed. Finished goods have generally completed the manufacturing process but have not yet been sold or distributed to the end user, and is no processing required in term of the goods after this stage by the seller. However, there may be instances that seller finished goods become buyer raw materials. An example of finished (packaging) goods includes imports of cardboard boxes around goods such as TVs. Also see ‘Semi-finished goods’.
Flexible packaging	Soft (flexible) plastics are generally defined as plastics that can be scrunched into a ball, unlike ‘rigid’ plastics such as bottles and tubs, which are moulded and hold their shape. Also refer to the 'Rigid packaging' entry.

Term	Definition
Foam packaging	Foam plastic packaging is in a lightweight cellular form resulting from introduction of gas bubbles during manufacture. Foam packaging is typically used to reduce shock and vibration or abrasion. The most common example used in packaging is expanded polystyrene (EPS).
Food organics	Food waste from households or industry, including food processing waste, out- of-date or off-specification food, meat, fruit and vegetable scraps. Excludes liquid wastes.
Fragmentable	See the 'Oxo-degradable or photo-degradable' entry.
Garden organics	Organics derived from garden sources e.g. grass clippings, tree prunings. Also known as green organics.
Generated material/waste	Materials or waste originating from a point source or source of origin.
Green organics	See the 'Garden organics" entry.
Greenhouse gases	Gases, including carbon dioxide and methane, that trap heat in the earth's atmosphere, affecting weather and climate patterns.
Hard waste	The term applied to household garbage that is not usually accepted in kerbside garbage bins by local councils e.g. old fridges and mattresses.
Hazardous waste	Waste with potentially adverse impacts on human health and the environment.
Household	Material from domestic (household) sources.
In the gate	Material entering a facility for reprocessing. This may include material that is unusable due to contamination. In the gate material that is subsequently sent to landfill is generally either a combination of gross contamination (i.e. materials that should not have been presented and are not recyclable at the receiving facility) and/or designated scrap plastics that were not recovered into product due to cross contamination with unrecyclable materials or losses due to other types of production inefficiencies (e.g. losses to trade waste). Also see 'Out the gate'.
Incinerator	A site and/or process that facilitates disposal of waste streams through burning, without producing another useful end product or capturing value from the waste material.
Internal use	Recyclate processed and used within the one company.
In-vessel composting	Composting technology involving the use of a fully enclosed chamber or vessel in which the composting process is controlled by regulating the rate of mechanical aeration. Aeration assists in heat removal, temperature control and oxygenation of the mass. Aeration is provided to the chamber by a blower fan which can work in a positive (blowing) and/or negative (sucking) mode. Rate of aeration can be controlled with temperature, oxygen or carbon dioxide feedback signals.
Kerbside waste/ collection	Waste collected by local councils from residential properties, including garbage, commingled recyclables and garden organics, but excluding hard waste.
Kraft paper	Kraft paper is paper, or paperboard (cardboard) produced from chemical pulp produced in the kraft process. It is commonly used in paper sacks, food and other paper-based wraps (including burger wraps and similar). Kraft pulp is normally darker than other wood pulps, but it can be bleached to make white papers.
Landfill	Discharge or deposit of solid wastes onto land that cannot be practically removed from the waste stream.
Lightweight shopping bag	Lightweight shopping bags are single-use HDPE bags (supermarket type) shopping bags of ≤35 microns in film thickness.

Term	Definition
Liquid paperboard (LPB)	Liquid paperboard (LPB) is a fibre-based packaging board that is designed to hold a liquid. It commonly comes in two main types, which are gable-topped LPB (plastic polymer layer / paperboard layer / plastic polymer layer), and aseptic LPB (plastic polymer layer / paperboard layer / aluminium foil layer / plastic polymer layer). Also see Polymer-coated paperboard (PCPB).
Local material utilisation	Materials recovered and reprocessed (recyclate) for use within Australia for the manufacture of new products.
Local material utilisation rate	Materials recovered for local manufacturing of new product divided by total packaging waste entering the system.
Local use	Recyclate used within Australia by an Australian company in the manufacture of a new product.
Local/Locally	In Australia.
Material flow analysis (MFA)	Material flow analysis (MFA) is a mass balanced based analytical method to quantify flows and stocks of materials or substances for a well-defined system and time period. MFA is also referred to as substance flow analysis (SFA).
Material recycling	Reprocessing, by means of a manufacturing process, of a used packaging material into a product, a component incorporated into a product, or a secondary (recycled) raw material
Materials recovered	Materials diverted from landfill for use or reprocessing irrespective of where the recovery or reprocessing takes place.
Materials recovery facility (MRF)	A centre for the receipt, sorting and transfer of materials recovered from the waste stream prior to transport to another facility for recovery and management. At a MRF materials may undergo mechanical treatment for sorting by characteristics such as density, size, magnetism and optical characteristics, and may include cleaning and compression. Materials may be received as mixed streams such as commingled recyclables from households and businesses or single streams such as metals.
Mechanical recycling	The use of physical processes such as sorting, chipping, grinding, washing and extruding to convert scrap plastics to a usable input for the manufacture of new products.
Mild steel	Mild steel is defined as having no more than 2% carbon and no other functional alloying elements. Mild steel is also referred to as ‘carbon steel’.
Mixed paper	Post-consumer kerbside mix of fibre based packaging and non-packaging papers. Includes materials such as magazine, newspaper, marketing, some old corrugated cardboard (OCC) and others fibre-based formats. Typically has high levels of contamination, of which broken glass is a particular issue.
Mixed plastics	Post-consumer kerbside mix of plastics based packaging and non-packaging plastic items. Includes materials such as bottles, containers and other packaging formats consisting of all the major polymer groups. Often undergoes a polymer sort at MRFs or post-MRFs to positively recover a limited range of polymer types, typically PET and HDPE. Often has moderate to high levels of contamination.
Municipal solid waste (MSW)	Solid waste generated from municipal and residential activities, and including waste collected by, or on behalf of, a municipal council. Excludes dedicated container deposit scheme (CDS) collections or drop-off by consumers or businesses.
Non-packaging / durable	Long-term use item; not designed to be single use or disposable within a 12-month period.
OCC	Old, corrugated cardboard (unbleached kraft).
ONP	Old newsprint.

Term	Definition
Open-loop recycling	Material from a product system is recycled into a different product system and may be of lower quality and functionality than the original material. Importantly, the recycled materials substitute for, and avoid the use of virgin materials in the new applications. Examples of this in Australia include the recycling of PET bottles into fibre for use in clothing and other textiles, and high-density polyethylene (HDPE) milk bottles into mobile garbage bins and milk crates. Open-loop recycling can be as environmental beneficial as closed-loop recycling. Also see 'Closed-loop recycling' and 'Downcycling'.
Optical sorting	Technologies used to sort glass by colour type, and plastics by polymer type.
Organic material	Plant or animal matter, e.g. grass clippings, tree prunings and food waste, originating from domestic or industrial sources.
Organics recycling	The treatment of separately collected organics waste by anaerobic digestion, composting or vermiculture.
Out the gate	Material leaving a facility following reprocessing and excluding most contamination. Also see ‘In the gate’.
Oxo-degradable or photo-degradable	Conventional fossil-based polymers (usually polyethylene or polypropylene) that have additives incorporated into the polymer at low rates (2-3%) to provide highly accelerated fragmentation of the plastic in sunlight or in the presence of oxygen or in an anaerobic environment.
Packaging	Material used for the containment, protection, marketing or handling of product. Includes primary, secondary and tertiary/freight packaging in both consumer and industrial packaging applications.
Packaging assembly	A collection of packaging components that are intended to function as a single packaging unit. For example, a single-use glass soft-drink bottle is typically a packaging assembly consisting of; a glass bottle, a metal or plastic closure and a paper or plastic label. Also see 'Packaging component'.
Packaging component	A part of a packaging assembly that can be separated by hand or by using simple physical means. Also see 'Packaging assembly'.
Packaging constituent	A part from which a packaging assembly or its components are made and which cannot be separated by hand or by using simple physical means.
Packaging level	Identifies the hierarchical level of the packaging assembly, i.e. primary, secondary or tertiary. **Primary packaging**, also known as consumer or retail packaging, refers to the layer/s that contain and protect individual product units up to the point of sale (e.g. bag, bottle, jar, box etc.) and that are removed for use. Primary packaging also includes any packaging given to consumers at the point of retail sales (e.g. retail bag, tissue paper etc.) as well as packaging delivered to consumers with online sales (e.g. bag, cushioning, box etc.). **Secondary packaging** is additional to the primary packaging and is used to protect and collate individual product units during storage, transport and distribution. This may include shelf-ready packaging (SRP), also known as retail-ready packaging (RRP) or counter- top display units (CDUs), containing multiple product units and used for retail display. **Tertiary packaging** is used in the protection and shipping of a product. This type of packaging is also known as distribution packaging, transport packaging and business-to-business (B2B packaging). It consists of packaging and components such as cardboard cartons, pallets, slip sheets, stretch wrap, strapping and any labels.
Packaging system	Complete set of packaging for a packaged good, encompassing one or more of the following that are applicable (depending on the packaged goods): Primary packaging, Secondary packaging, Tertiary (distribution or transport) packaging.

Term	Definition
Paper & paperboard	Paperboard is a group term related to papers (including multi-ply papers) that have been manufactured specifically for packaging purposes. Paper is both an input into paperboard manufacturing and can be a packaging product in its own right.
PE-HD or HDPE	High-density polyethylene (PIC 2). Typically referred to as HDPE.
PE-LD or LDPE	Low-density polyethylene (PIC 4). Typically referred to as LDPE.
PE-LLD or LLDPE	Linear low-density polyethylene (PIC 4). Typically referred to as LLDPE.
PET	Polyethylene terephthalate (PIC 1).
PIC	Plastic identification code. Also referred to as the resin identification code (RIC) in some other countries.
Placed on market (POM)	Packaging is defined as being 'placed on market' (POM) when it is first made available to the end-consumer, and disposal is following the intended full use of the packaging and can be considered 'post-consumer'. Packaging losses prior to the point of POM are considered pre-consumer losses.
Polymer coated paperboard (PCPB)	Paper-based packaging with a polymer coating for water resistance and structural integrity, generally, polyethylene (PE) or polylactic acid (PLA). Aseptic PCPB containers also contain a foil/metallised film layer.
Post-consumer domestic	Used material from household sources. Mostly packaging material from kerbside recycling collections.
Post-consumer industrial	Used material from non-household sources.
Post-consumer recycled content (PCR)	The post-consumer recycled content of packaging placed on market is sourced from end-of-life materials generated by households or by commercial, industrial and institutional facilities.
Post-consumer used packaging	ISO 14021 defines post-consumer material as material generated by households or by commercial, industrial and institutional facilities in their role as end users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain. It excludes pre-consumer material (e.g. production scrap).
PP	Polypropylene (PIC 5).
Pre-consumer recycled content	The pre-consumer recycled content of packaging placed on market is sourced from scrap materials generated during manufacturing (excluding rework). The compositional profile of the pre-consumer recycled content of the material is typically the same as that of the packaging material POM, and reflects the composition of the incoming material into the packaging manufacturing. That is, it can have a proportion of virgin, pre-consumer and post-consumer content. If manufacturing processes, including scrap reprocessing processes, are considered a single black box, then the sources of pre-consumer materials upstream from manufacturing processes are either virgin or post-consumer sourced materials only.
Pre-consumer scrap packaging	Scrap off-cuts and off-specification materials in the manufacturing industry which are collected for reprocessing at a different facility. Does not include material that is recycled directly back into manufacturing processes at the same facility. Does not include material that has reached the end-consumer, whether domestic, commercial or industrial.
PREP	Packaging Recyclability Evaluation Portal (PREP) is an online platform used to verify if packaging is or isn't recyclable in Australian and New Zealand kerbside collections. Also see the related 'ARL' entry.
Primary material	See 'Virgin material'.

Term	Definition
Problematic	Can be considered a ‘contaminant’ in the recycling facility because it is either 1) not one of the requested materials 2) causes problems e.g. getting entangled in machinery 3) reduces the quality of the recyclate or some other reason.
Process derived fuels	Also called process engineered fuel (PEF) or refuse derived fuel (RDF), is a fuel produced after basic processing in a MRF or MBT to increase the calorific value and remove recyclable materials and contaminants of municipal solid waste, commercial and industrial waste and construction and demolition waste.
Processing facilities	Facilities which either receive materials directly from collection systems or from recovery facilities for further sorting and/or processing to provide material for use in the generation of new products.
Product stewardship	A concept of shared responsibility by all sectors involved in the manufacture, distribution, use and disposal of products, which seeks to ensure value is recovered from products at the end of life.
PS-E or EPS	Expanded polystyrene (PIC 6). Typically referred to as EPS.
Public place recycling	Recycling facilities found in public areas, such as parks, reserves, transport hubs, shopping centres and sport and entertainment venues, that allow the community to recycle when away from home.
Putrescible waste	Waste that readily decomposes, including food waste and organic waste from gardens.
PVC	Polyvinyl chloride (PIC 3).
Pyrolysis	Thermal breakdown of waste in the absence of air, to produce char, pyrolysis oil and syngas e.g. the conversion of wood into charcoal.
Recover / recovery / resource recovery	The process of recovering resources from waste for reuse or reprocessing. This includes collection, sorting and aggregation of materials. To convert waste into a reusable material.
Recovery rate	Recovery (at a defined point) as a percentage of end-of-life disposal. Similar meaning to 'Recycling rate' but can include material into composting and energy recovery. Excludes reused products. Also see 'Diversion rate' and 'Recycling rate'.
Recyclable packaging	Packaging (1) or packaging component (2,3) is recyclable if its successful post-consumer (4) collection, sorting, and recycling is proven to work in practice and at scale. Also see the related ‘Compostable packaging’ and ‘Reusable packaging’ definitions. Supporting notes: 1. A package can be considered recyclable if its main packaging components, are recyclable according to the above definition, and if the remaining minor components are compatible with the recycling process and do not hinder the recycling potential of the main components. The ARL program provides information on recycling potential of packaging through kerbside collection services. 2. A packaging component is a part of packaging that can be separated by hand or by using simple physical means (ISO 18601), e.g. a cap, a lid and (non in-mould) labels. 3. A packaging component can only be considered recyclable if that entire component, excluding minor incidental constituents (5), is recyclable according to the definition above. If just one material of a multi-material component is recyclable, one can only claim recycling potential of that material, not of the component as a whole (in line with ISO 14021).

Term	Definition
	4. ISO 14021 defines post-consumer material as material generated by households or by commercial, industrial and institutional facilities in their role as end users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain. It excludes pre-consumer material (e.g. production scrap). 5. ISO 18601:2013: A packaging constituent is a part from which packaging or its components are made and which cannot be separated by hand or by using simple physical means (e.g. a layer of a multi-layered pack or an in-mould label).
Recycling potential	See the 'Recyclable packaging' entry.
Recyclate	Scrap material either before or after reprocessing.
Recycle/Recyclables/Recycling	In common practice the term is used to cover a wide range of activities, including collection, sorting, reprocessing and reuse.
Recycled (packaging)	Packaging is recycled if at least 70% of its weight is recycled into a product, a component incorporated into a product, or a secondary (recycled) raw material.
Recycled content	Is the proportion, by mass, of pre-consumer and post-consumer recycled (PCR) material in packaging (AS/ISO 14021). ‘Pre-consumer’ material is material diverted from the waste stream during manufacturing (excluding rework). ‘Post-consumer’ material is material waste generated by households or by commercial, industrial and institutional facilities. The amount of renewable or recycled material is expressed as a percentage of the quantity of packaging material put onto the market.
Recycling	Activities in which solid wastes are collected, sorted, processed (including through composting), and converted into raw materials to be used in the production of new products (the amount of solid waste recycled is net of any residuals disposed). Excludes energy recovery and stockpiles.
Recycling rate	Recovery (at a defined point) as a percentage of end-of-life disposal. Similar meaning to 'Recovery rate' but excludes material into energy recovery and reused products. Also see 'Diversion rate' and 'Reprocessing rate'.
Refuse derived fuels	Refer to ‘Process derived fuels’.
Reprocess / reprocessing	To put a material that has been used through an industrial process to change it so that it can be used again.
Reprocessor / reprocessing facility / reprocessing infrastructure	Facility that uses an industrial process to change the physical structure and properties of a waste material so it can be used again. This can include facilities that dismantle products, such as tyres, e-waste and mattresses, and energy from waste facilities that use materials to generate energy.
Resale centre / shop	A centre/shop that enables the sale and subsequent reuse of good quality, saleable products and materials that were disposed of by their previous owner.
Residual waste	Residual material that remains after any source separation or reprocessing activities of recyclable materials or garden organics. Waste that is left over after suitable materials have been recovered for reuse and recycling. This generally means the environmental or economic costs of further separating and cleaning the waste are greater than any potential benefit of doing so.
Resin	Raw plastic polymer material.
Resource recovery	Total materials recovered including materials sent to recycling and energy recovery, including export and stockpiling, net of contaminants and residual wastes sent to disposal.

Term	Definition
Resource recovery infrastructure	Facility that receives and manages materials to enable them to be reused or reprocessed. This includes drop off points, resale centres, resource recovery centres, transfer stations and materials recovery facilities.
Resource recovery rate	The proportion calculated by dividing resource recovery by waste generation (also referred to as the 'recovery rate').
Reusable packaging	Packaging or packaging component which has been designed to accomplish or proves its ability to accomplish a minimum number of trips or rotations in a system for reuse. Also see the related 'Compostable packaging' and 'Recyclable packaging' definitions. Supporting notes: 1. A trip is defined as transfer of packaging, from filling/loading to emptying/unloading. A rotation is defined as a cycle undergone by reusable packaging from filling/loading to filling/loading (ISO 18603). 2. The minimum number of trips or rotations refers to the fact that the 'system for reuse' in place should be proven to work in practice, i.e. that a significant share of the package is actually reused (measured e.g. by an average reuse rate or an average number of use-cycles per package). 3. A system for reuse is defined as established arrangements (organisational, technical or financial) which ensure the possibility of reuse, in closed-loop, open-loop or in a hybrid system (ISO 18603). 4. Reuse is an operation by which packaging is refilled or used for the same purpose for which it was conceived, enabling the packaging to be refilled (ISO 18603). Also refer to the 'Single-use packaging' entry.
Reuse	Recovering value from a discarded resource without processing or remanufacture e.g. garments sold though opportunity shops.
Rigid packaging	Rigid plastic packaging such as bottles and tubs, which are (generally) moulded and hold their shape. Also refer to the 'Flexible packaging' entry.
Scrap packaging	Used packaging that has been recovered for reprocessing but has not yet been reprocessed.
Secondary processing	A process undertaken after sorting in which a recovered material is put through an industrial process to change it so that it can be used as an input for the manufacture of new products. Also see 'Reprocessor'.
Sectors / industry sectors	Groupings of industries used to generalise patterns in waste generation and disposal e.g. construction and demolition, food services including food retail and food manufacturing, small to medium enterprises.
Semi-finished goods	Semi-finished goods are also known as intermediate goods or producer goods. Semi-finished products are goods that are used as inputs in the production of other goods including final goods. In the production process, semi-finished goods either become part of the final product, or are changed beyond recognition in the process. Semi-finished goods are sold between industries, and are not directly sold to the ultimate end-user of products made from the semi-finished goods. Examples of semi-finished (packaging) goods include imports of large format rolls of film for local conversion into plastic bags. Or imports of tin-plated steel rolls for local conversion into steel cans. Also see 'Finished goods'.
Single-use packaging	Single-use packaging is defined as a packaging system or packaging component which has been principally designed to accomplish a single trip, even if some form of reuse is possible. Single-use packaging does not meet the definitional requirements of ISO 18603:2013 (Packaging and the environment – Reuse) as reusable packaging. Also refer to the 'Reusable packaging' entry.

Term	Definition
Soft plastics packaging	Soft (flexible) plastics are generally defined as plastics that can be scrunched into a ball, unlike ‘rigid’ plastics such as bottles and tubs, which are moulded and hold their shape.
Solid industrial waste (SIW)	Solid waste generated from commercial, industrial or trade activities, including waste from factories, offices, schools, universities, state and federal government operations and commercial construction and demolition work. Excludes MSW and hazardous wastes.
Solid inert waste	Solid inert waste is hard waste that has a negligible activity or effect on the environment. The waste may be either a municipal or industrial waste.
Solid waste	Non-hazardous, non-prescribed, solid waste materials, ranging from municipal garbage to industrial waste.
Sorting / primary sorting	A process typically between collection (recovery) and reprocessing in which collected end-of-life materials are sorted (or disassembled) into more usable and economically valuable material fractions. Material recovery facilities (MRFs) are sorting facilities.
Sorting efficiency	Material processed at MRF or CDS divided by total packaging waste entering the system.
Source separation	The practice of segregating materials into discrete material streams prior to collection by, or delivery to, processing facilities.
Source stream	Either MSW, C&I, C&D or CDS.
Stockpile	Unprocessed or processed material where 500 tonnes or more of the same material has been held for more than six months.
Stockpiling	Storage of materials in line with the 'stockpile' definition.
Transfer coefficient	A derived factor that defines the partitioning of an input entering a process into a transformed material stream (e.g. the separation of PET from kerbside recycling materials at MRF).
Transfer station	Facility which receives materials from the waste stream for possible segregation, consolidation, or compaction for bulk transport for resource recovery, treatment or disposal facilities.
Unprocessed material	Material that is unrefined and has not been through any process of recycling.
Virgin material	Material that has been sourced through primary resource extraction. Virgin materials are often referred to as primary materials. Virgin materials are not sourced from recycled materials (sometimes called secondary materials). For example, ‘virgin’ steel is manufactured from iron ore, and ‘virgin’ paper is manufactured from plantation sourced wood fibre.
Waste	Any discarded, rejected, unwanted, surplus, or abandoned matter, including where intended for recycling, reprocessing, recovery, purification or sale. Anything that is no longer valued by its owner for use or sale, and which is, or will be, discarded. In this document, the term 'solid waste' refers to non-hazardous, solid waste materials ranging from municipal garbage to industrial waste.
Waste packaging export	Export of (typically baled) scrap packaging materials sent offshore for reprocessing.
Waste to energy	Refer to ‘Energy from waste’.

Appendix B – Project method

Provided in this appendix is an overview of the project method, changes in the method in 2023–24 relative to previous years, and tabulations of the main packaging material and component lists adopted to frame the data collection and reporting for the study.

B.1 Data sources

Packaging consumption and recovery data was obtained from a combination of sources. The main data sources and the related reporting contributions are summarised in **Table B-1**.

Table B-1 – Data sources and reporting outputs.

Data source	Data collection method	Primary reporting contributions
Packaging manufacturers and importers	National survey undertaken as part of this project.	• Packaging POM. • Recycled content. • Recovery rate. • Packaging POM projections.
Packaging reprocessing facility operators	National survey undertaken as part of this project.	• Packaging recovery. • Recovery rate. • Packaging recovery projections.
Container deposit scheme (CDS) operators	National survey undertaken as part of this project.	• National CD eligible packaging dataset (Appendix E). • Quantification of CDS recovery collection services.
Reusable packaging system operators and users	Selective survey undertaken as part of this project.	• Packaging reuse.
Organics recyclers and energy recovery facility operators interview form	Selective survey undertaken as part of this project.	• Packaging recovery. • Recovery rate.
Australian import and export data	Australian Customs import/export[1] data extracts (ABS, 2025b; 2025c).	• Packaging POM. • Packaging recovery. • Recovery rate.
Population (census) data	Australian Bureau of Statistics published population data (ABS, 2025a).	• Per capita estimates of packaging POM and recovery.

1. Australian Harmonized Tariff Item Statistical Code data (imports) / Australian Harmonized Export Commodity Classification data (exports).

B.2 Data collection and stakeholder consultation

Survey forms were prepared for the stakeholder groups listed above. Stakeholders to be surveyed were identified through previous survey contacts, APCO Membership lists and the project team's industry knowledge.

It is important to note a key limitation of the packaging manufacturer, reprocessor and reusable packaging system operator/user surveys undertaken for this project, which is that surveys are undertaken on a voluntary basis and that there is currently no independent auditing of individual survey responses undertaken.

A summary of the survey outcomes by organisation type is provided in **Table B-2**. All manufacturers and reprocessors that were identified were contacted.

Table B-2 – Packaging manufacturer, reprocessor and other survey responses (facility count).

Organisation type	Complete – interview /phone/e-mail	Complete – estimated	No response or decline	Total
Manufacturer – fibre	7	5	1	**13**
Manufacturer – glass	2	4	0	**6**
Manufacturer – metals	11	5	0	**16**
Manufacturer – plastics	64	14	14	**92**
Manufacturer – wood	0	0	1	**1**
Reprocessor – fibre	8	5	0	**13**
Reprocessor – glass	9	16	0	**25**
Reprocessor – metals	4	4	1	**9**
Reprocessor – plastics	95	6	1	**102**
Reprocessor – organics	0	9	0	**9**
Container deposit scheme (CDS) operator	8	0	0	**8**
Energy recovery – WtE[a] fuel manufacturer	4	0	0	**4**
Industry group	2	0	0	**2**
Reusable packaging system operator	8	4	1	**13**
Reusable packaging system user	2	0	0	**2**
Total	**224**	**72**	**19**	**315**
Total (%)	**71%**	**23%**	**6%**	**100%**

a) WtE – Waste-to-energy.

Generally, where a significant organisation declined to provide a response, or did not respond within the survey period, it was possible to estimate the level of activity based on publicly available data or through consultation with others in the industry.

It was not possible to estimate production for 14 non-responding plastic packaging manufacturers. However, estimates of packaging POM were scaled based on whole of market estimates of packaging consumption in 2023–24 available through the Australian Plastics Flows and Fates Study 2023–24 (Blue Environment, 2025).

B.3 Determination of packaging consumption

Australian packaging consumption from local sources was determined through a national survey of packaging manufacturers to obtain data on the following packaging attributes:

- Packaging POM by material type.
- Estimated accuracy range of reported POM, by material type.
- Location of material source – local or overseas.
- Packaging manufacturing losses to recovery or landfill.
- Packaging component group – bottle or jar, carton or box, closure, tub, tray or punnet, etc.
- Single-use / reusable packaging allocation.
- Degradability rating.

- Composition of flexible plastic packaging (as relevant).
- Recycled content source – post-consumer, pre-consumer or virgin (primary).
- Potential future post-consumer recycled content – easily achievable and maximum achievable.
- Packaging jurisdiction of use.
- Packaging sector of use, allocated to:
    - Business-to-consumer (B2C) – At home.
    - B2C – Away-from-home (AfH).
    - Business-to-business (B2B).
- Packaging suitability for food contact applications.
- Market growth and capacity change estimates.

POM means that the packaging has been made available to the end-consumer (including business users). The subsequent disposal is following the intended use of the packaging and is considered 'post-consumer' disposal. Packaging losses prior to the point of POM are considered ‘pre-consumer’ losses.

Australian consumption of packaging through the import of finished goods and the import of semi-finished packaging (e.g. sheets of paperboards and rolls of plastic film for local filling) were determined through an extensive analysis of Australian import and export data for the 2023–24 financial year. This was based on the review and analysis of 3,900 Customs import codes and 2,600 export codes.

Codes over threshold values for either quantity or dollar value were allocated on a line-by-line basis to packaging material types and components and converted to an estimated equivalent packaging mass basis.

These allocations were based on code descriptors, or where this did not provide sufficient detail, on supporting research (online and instore) and manufacturer reports of their quantities of imported and exported packaging. Where no other data was available, standard conversions were applied to convert imports/exports of products into equivalent packaging quantities.

There were two main categories of codes that were allocated through the quantification framework:

- **Codes where the imported/exported product is the packaging** – Allocations were undertaken of the (packaging) product to: material type, packaging component, sector of use, data accuracy rating and other data attributes. These codes were also assessed under the following category.
- **Codes where the imported/exported product is contained in primary, secondary and tertiary packaging** – Allocations were undertaken of the packaging (on the product) to: material type, packaging component, sector of use, data accuracy rating and other data attributes.

Due to the relatively sparse information that was available to support many code allocations, the data accuracy rating for these allocations was often low to very low, which is quantified in the aggregated accuracy range estimates that are reported.

B.4 Determination of packaging recovery

Australian packaging recovery was determined through a national survey of packaging reprocessors to obtain data on the following packaging attributes:

- Recovery by material type.
- Estimated accuracy range of reported recovery, by material type.
- Level of reprocessing undertaken by facility.
- Packaging reprocessing losses to (downstream) recycling or landfill.
- Post-consumer or pre-consumer material source.
- Waste source sector by collection service: municipal solid waste (MSW), commercial and industrial (C&I) waste, construction and demolition (C&D) waste, and container deposit scheme (CDS) collection services.
- Rigid/flexible classification for reprocessed plastic packaging.
- Packaging source jurisdiction (state or territory).
- Packaging component group – bottle or jar, carton or box, closure, tub, tray or punnet, etc.
- Single-use / reusable packaging material source.
- Material use application for processed product – packaging or non-packaging.
- Recovered packaging material suitability for food contact applications.
- Reprocessing capacity – current and planned changes.
- Stockpile estimates.

The location in the value chain at which recovery is measured is stated in all cases. Recovery is generally measured at the out-going gate of the secondary processing facility for the used packaging. This is the point that the processed material is typically ‘input ready’ for the manufacture of new packaging or other products. Examples of secondary processing facilities include paper mills, glass beneficiation facilities, plastics washing and flaking facilities, and metal smelting facilities.

For materials other than metals, overseas processing losses associated with the export of sorted but unprocessed materials have been estimated based on the losses reported by local operators of secondary processing facilities.

For metals, overseas processing losses associated with the export of sorted but unprocessed materials have been estimated based on advice by local aluminium reprocessors and information from Antrekowitsch, et al. (2014) for aluminium and steel packaging losses respectively. Packaging recovery includes quantities of post-consumer plastic and wood packaging sent to energy recovery in 2023–24.

Packaging recovery also includes estimates of recovery through composting facilities. This is primarily single-use wood packaging, fibre-based packaging (e.g. cardboard), and very small quantities of compostable plastics packaging.

B.5 Determination of packaging recovery rates

The packaging recovery rates determined in this report are generally based on the post-consumer packaging recovery measured at the out-going gate of the secondary processing facility (including WtE fuel manufacturers) for the used packaging, divided by packaging POM by material group/type.

The exception to this is packaging to organics reprocessing, for which the post-consumer packaging recovery is measured at the in-coming gate of the secondary processing facility.

It is important to note that in the determination of recovery rates, packaging POM is assumed to be equivalent to post-consumer used packaging. That is, all packaging POM in 2023–24, also reached end-of-life and was made available for recovery in 2023–24. This is largely the case for single-use packaging, but is less applicable to some forms of longer lived packaging in reusable packaging systems.

B.6 Determination of packaging recycling potential

The determination of packaging recycling potential supports the evaluation of progress against the following National Packaging Target:

- 100% reusable, recyclable, or compostable packaging.

Throughout the report the term *packaging recycling potential* is used as an umbrella term for reusable, recyclable, or compostable packaging.

The method for determining packaging recycling potential uses scores based on the Australasian Recycling Label Program (ARL) assessment framework and APCO advice, for each packaging material type and packaging component combination.

A recycling potential classification scoring framework has been developed for both B2C and B2B packaging sectors of use. The assessment framework is based on scoring against the following three criteria:

- Collection system widely available (C).
- Sortable and technically recyclable (S/T).
- End-market available for recovered material (M).

An overall ‘recycling potential’ classification score has been determined for each single-use packaging format, based on the scores for the three criteria above. The overall score is simply the lowest of the three criteria scores.

The B2C and B2B packaging sector scoring frameworks are summarised in the following tables. The primary difference is in the description of the collection system criteria.

Table B-3 – Recycling potential classification score basis for each criterion – B2C packaging.

Classification (score)	C	S/T	M
Good recycling potential (2)	The material is widely collected at kerbside (>80% of the kerbside population has access to a council service).	The material can be readily sorted at a MRF and causes no significant issues for reprocessors.	There is a well-established market for the use of the recycled material.
Poor recycling potential (1)	The material is less widely accepted at kerbside (between 60–80% of the kerbside population has access to a council service).	The material can be readily sorted at a MRF but will cause some issues for reprocessors leading to a loss of value.	The material will be classified as an outthrow or it will have a reduced market value that makes its recovery marginal.
No recycling potential (0)	The material is not widely accepted at kerbside (<60% of the kerbside population has access to a council service).	The material can either not be readily sorted at a MRF or it impacts on the recovery of other materials at the reprocessor.	It is not economical to separate this material for use in other applications.

Table B-4– Recycling potential classification score basis for each criterion – B2B packaging.

Classification (score)	C	S/T	M
Good recycling potential (2)	Collection services for the material (to recovery) are offered by the major commercial collectors in metropolitan areas, at a similar or lower cost than landfill services.	The material can be readily sorted at a C&I MRF and causes no significant issues for reprocessors.	There is a well-established market for the use of the recycled material.
Poor recycling potential (1)	Collection services for the material (to recovery) might be offered by major commercial collectors but at higher cost than landfill services or availability of services is more limited.	The material can be readily sorted at a C&I MRF but will cause some issues for reprocessors leading to a loss of value.	The material will be classified as an outthrow or it will have a reduced market value that makes its recovery marginal.
No recycling potential (0)	No collection services for the material (to recovery) are offered by the major commercial collectors.	The material can either not be readily sorted at a C&I MRF or it impacts on the recovery of other materials at the reprocessor.	It is not economical to separate this material for use in other applications.

The scoring frameworks outlined in the previous two tables apply to single-use packaging only. Reusable packaging (used within established reusable packaging systems) and certified compostable plastic packaging are allocated with the single-use packaging that achieves a good recycling potential classification score.

B.7 Determination of reusable packaging

The quantification for the determination of reusable packaging has been framed by the following ISO standard:

- *ISO 18603:2013 Packaging and the environment – Reuse (ISO, 2013).*

In ISO (2013, p. 1) reusable packaging is defined as:

> *Packaging or packaging component which has been designed to accomplish or proves its ability to accomplish a minimum number of trips or rotations in a system for reuse.*

ISO (2013, p. 3) requires that the following conditions are met in order for a claim of 'reusable' to be appropriate:

a) that the design of the packaging enables the principal components to accomplish a number of trips or rotations in normally predictable conditions of use;

b) *that the packaging is capable of being successfully reconditioned in accordance with the requirements of Annex B (including removal/replacement of damaged components, appropriate cleaning or washing, inspection and inspection of fitness-for-purpose, and re-entry into the reuse system) and,*

c) *that a system, necessary to support reuse, is available in markets in which the packaging is placed, as appropriate.*

The established Australian reusable packaging systems that fit the criteria above (with some minor exceptions) and have been quantified this year are:

- **Kegs** – Beer kegs only.
- **Drums (200–205 litre)** – All reusable steel and plastic drums in the 200–205 litre volumetric capacity range (44 gallon UK or 55 gallon US).
- **Intermediate bulk containers (IBCs)** – All rigid IBCs are assumed to be reusable (rather than single-use) packaging.
- **Milk crates** – Non-collapsible plastic crates. Limited to dairy applications only.
- **Pallets** – Reusable timber and plastic pallets only, including display pallets. Single-use pallets are excluded.
- **Returnable plastic crates (RPCs)** – Collapsible plastic crates. Limited to major supermarket systems only (e.g. ALDI, Coles and Woolworths).
- **Reusable shopping bags** – Reusable non-woven PP bags, and reusable HDPE and LDPE bags (supermarket type).
- **Reusable coffee cups** – Reusable coffee cups used in an AfH setting where they could be reasonably expected to have avoided the use of a single-use coffee cup.

Due to circular flows and often long lifespans, quantification of reusable packaging systems requires metrics that measure mass flows, the same as single-use packaging flow quantifications, but extended to measure the service delivered by reusable packaging per cycle.

Strictly speaking single-use packaging systems should also require this determination of the service delivered per (single-use) cycle, to enable the monitoring of changes in packaging system product to packaging ratio efficiencies (e.g. quantify the impact of single-use packaging light-weighting). It has not been considered necessary to track this metric in the past.

However, this changes once it is of interest to quantify and track single-use and reusable packaging system flows in an integrated manner. The common denominator becomes the service provided by packaging systems, which then supports the following mass-based comparisons:

- Service performance between single-use and reusable packaging systems based on mass flows of packaging standardised to product flows.
- Single-use and reusable packaging system inputs and outputs standardised to product flows.
- Service performance efficiency changes for packaging systems, standardised to product flows, between different time periods.

A purpose of this quantification of eight reusable packaging systems is to advance the consideration of this system performance measure.
The data collection plan adopted for the reusable packaging quantifications is outlined in the following table.

Table B-5 – Data plan for packaging reuse quantification (2023–24 target year).

Data requirement	Data purposes	Data sources
General reusable packaging system description.	General overview of the system.	Surveys of major pool operators and/or users, including: Major breweries (3). Major supermarkets (3). Major dairy-processing related organisations (1). Major pool operators (5). Major reusable plastic bag suppliers (2). Reusable packaging manufacturers (4).
Quantity of new reusable packaging POM in 2022–23.	Reusable packaging pool inputs in 2022–23.	
Quantity of reusable packaging leaving the reusable packaging pool (stocks) to end-of-life (EoL) fate in 2022–23.	Reusable packaging pool outputs in 2022–23 and fate.	
Average lifespan of reusable packaging.	Support estimation of pool size and service delivered by packaging.	
Average number of reuse cycles prior to reaching EoL or otherwise leaving the pool.	Support estimation of pool size and service delivered by packaging.	
Reusable packaging cycle time.	Support estimation of pool size and service delivered by packaging.	
Total pool size in 2022–23.	Support estimation of pool size.	
Other details.	Reusable packaging materials, packaging weights, and product weights. Competing single-use packaging types. System reconditioning descriptions including: removal/replacement of damaged components, appropriate cleaning or washing, inspection of fitness-for-purpose, and re-entry into the reuse system.	

The metrics that have been quantified in this section of the report are:

- Pool (stocks) size in 2023–24 (tonnes and number).
- New reusable packaging entering service (inputs) in 2023–24 (tonnes and number).
- Old reusable packaging exiting service (outputs) in 2023–24 (tonnes and number) and fate.
- Reusable packaging cycle time, cycle number and average service life.
- Indicative estimates of avoided single-use packaging consumption through use of the assessed reusable packaging systems.

B.8 Comparability of 2023–24 data with previous years

The scope and calculation methods have been applied as consistently as possible across all packaging material types and components. However, it is important to note that there are a number of changes that have been adopted that may impact the comparability between the 2017–18 to 2023–24 datasets. The changes have all been adopted to improve the utility, quality and depth of the packaging quantification dataset.

Scope or method changes between 2022–23 and 2023–24

The noteworthy changes this year were:

- **Analysis outputs and report change** – The previous material group of ‘Plastic’ packaging has been split into 2 materials groups of ‘Plastic – Flexible’ and ‘Plastic – Rigid’ packaging throughout the 2023–24 report and packaging data tool.
- **Data collection** – Further alignment and coordination of APCO and Blue Environment data collection activities, to reduce data collection duplication, particularly with respect to packaging manufacturers.

Refer to previous reports for details on scope or method changes between the 2017–18 to 2022–23 reports.

B.9 Definitional lists

The lists of packaging material type labels applied during data collection, analysis and reporting are provided in **Table B-6**.

Two separate lists are provided for the consumption and recovery/disposal lifecycle stages. These are as consistent as possible, while reflecting the difficulties of disaggregating data collection, particularly at the recovery/disposal stage.

Table B-6 – Packaging material type and group lists.

Material types – Consumption related	Material type list – Collection or sorting output related	Material group
Boxboard/Cartonboard	Boxboard/Cartonboard	Paper & paperboard
Corrugated cardboard	Corrugated cardboard	Paper & paperboard
High wet strength carrier board	High wet strength carrier board	Paper & paperboard
Kraft paper	Kraft paper	Paper & paperboard
Moulded fibreboard	Moulded fibreboard	Paper & paperboard
Polymer coated paperboard – Aseptic	Polymer coated paperboard – Aseptic	Paper & paperboard
Polymer coated paperboard – Gable top	Polymer coated paperboard – Gable top	Paper & paperboard
Polymer coated paperboard – Cold cup	Polymer coated paperboard – Cold cup	Paper & paperboard
Polymer coated paperboard – Hot cup	Polymer coated paperboard – Hot cup	Paper & paperboard
Polymer coated paperboard – Other	Polymer coated paperboard – Other	Paper & paperboard
Polymer coated paper	Polymer coated paper	Paper & paperboard
Other fibre packaging	Other fibre packaging	Paper & paperboard
Not applicable	Paper & paperboard – Mixed	Paper & paperboard
Newsprint & magazine	Newsprint & magazine	Paper & paperboard
Other fibre non-packaging	Other fibre non-packaging	Paper & paperboard
Glass – Amber	Glass – Amber	Glass
Glass – Flint	Glass – Flint	Glass
Glass – Green	Glass – Green	Glass
Not applicable	Glass – Mixed	Glass
Glass – Other	Glass – Other	Glass
Plastic – PET (1) – Natural	Plastic – PET (1) – Natural	Plastic
Plastic – PET (1) – Coloured – Transparent	Plastic – PET (1) – Coloured – Transparent	Plastic
Plastic – PET (1) – Coloured – Opaque	Plastic – PET (1) – Coloured – Opaque	Plastic
Plastic – HDPE (2) – Natural	Plastic – HDPE (2) – Natural	Plastic
Plastic – HDPE (2) – Coloured	Plastic – HDPE (2) – Coloured	Plastic
Plastic – PVC (3)	Plastic – PVC (3)	Plastic

Material types – Consumption related	Material type list – Collection or sorting output related	Material group
Plastic – LDPE (4)	Plastic – LDPE (4)	Plastic
Plastic – PP (5) – Natural	Plastic – PP (5) – Natural	Plastic
Plastic – PP (5) – Coloured	Plastic – PP (5) – Coloured	Plastic
Plastic – PS (6)	Plastic – PS (6)	Plastic
Plastic – EPS (6)	Plastic – EPS (6)	Plastic
Plastic – Bioplastic – Compostable (7)	Plastic – Bioplastic – Compostable (7)	Plastic
Plastic – Other (7)	Plastic – Other (7)	Plastic
Not applicable	Plastic – Mixed (1–7)	Plastic
Not applicable	Plastic – Mixed (3–7)	Plastic
Not applicable	Plastic – Mixed	Plastic
Plastic – Unidentified	Plastic – Unidentified	Plastic
Plastic – Non-packaging	Plastic – Non-packaging	Plastic
Aluminium – Beverage	Aluminium – Beverage	Metal
Aluminium – Non-beverage	Aluminium – Non-beverage	Metal
Aluminium – Other	Aluminium – Other	Metal
Steel – Tin-plate steel	Steel – Tin-plate steel	Metal
Steel – Mild steel	Steel – Mild steel	Metal
Steel – Stainless steel	Steel – Stainless steel	Metal
Steel – Other	Steel – Other	Metal
Metal – Other	Metal – Other	Metal
Fibreboard – Low-density	Fibreboard	Wood
Fibreboard – Medium-density	Fibreboard	Wood
Fibreboard – High-density	Fibreboard	Wood
Fibreboard – Oriented strand board	Fibreboard	Wood
Wood – Hard	Wood – Hard	Wood
Wood – Soft	Wood – Soft	Wood
Wood – Plywood	Wood – Plywood	Wood
Wood – Other	Wood – Other	Wood
Ceramic	Ceramic	Other
Cloth or fabric	Cloth or fabric	Other
Composite	Composite	Other
Other material into packaging	Other material into packaging	Other
Other material into non-packaging	Other material into non-packaging	Other
Not applicable	Commingled recyclables	Commingled recyclables
Not applicable	Food organics and/or garden organics	Organics
Contamination	Contamination	Other
Waste to landfill	Waste to landfill	Mixed wastes
Unknown	Unknown	Unknown

Table B-7 – Packaging component groups.

Packaging component groups	In scope?	Comments
Bag or pouch	Yes	Includes bags, bladders, envelopes, liners, nets, pouches (including peel pouches) and sachets
Barrel or drum	Yes	Barrels includes barrels, casks and kegs. Drums are plastic and steel containers of >20 L. Note that barrels, casks and kegs are not classified as drums. This group includes rigid intermediate bulk container (RIBC) and flexible intermediate bulk containers (FIBC).
Bottle or jar	Yes	See Table B-7 entries for more details.
Can	Yes	A metallic and generally cylindrical container of unspecified size. Includes aerosol containers.
Carton or box	Yes	See Table B-7 entries for more details.
Closure	Yes	See Table B-7 entries for more details.
Label or seal	Yes	See Table B-7 entries for more details.
Pallet or bin	Yes	Group for larger format packaging types not covered elsewhere.
Returnable plastic crate (RPC)	Yes	Returnable plastic crate (RPC).
Shopping bag	Yes	See Table B-7 entries for more details.
Tableware	Yes	Includes plates, bowls, straws, stirrers, cups, cup lids and cutlery, all intended for single-use.
Tub, tray or punnet	Yes	See Table B-7 entries for more details.
Tube or cartridge	Yes	See Table B-7 entries for more details.
Wrap	Yes	See Table B-7 entries for more details.
Other packaging component	No	See Table B-7 entries for more details.

Provided in **Table B-8** is the list of packaging components, and the related groups (as summarised in **Table B-7**) adopted this year. Note that project reporting is generally not at the component level, but rather at the component group level summarised in **Table B-7**, except as identified elsewhere in this report.

Table B-8 – Packaging components.

Component	Component group	In scope?	Comments
Bag	Bag or pouch	Yes	A preformed, flexible container, generally enclosed on all but one side, which forms an opening that may or may not be sealed after filling.
IBC – flexible	Bag or pouch	Yes	A non-rigid container used for transport and storage of fluids and other bulk materials. The construction of the IBC container and the materials used are chosen depending on the application, but is typically woven polypropylene fabric reinforced with nylon or polyester strapping.
Liner	Bag or pouch	Yes	A liner is any layer of material that is not acting as a bag or wrapper, but is being used to protect or separate contents from outer packaging. Can be found as inner linings of liquid or pressurised containers (B2C), or as lining cartons in B2B use. Note, bags or wrappers may also be used, where liners are present.
Net	Bag or pouch	Yes	A container of meshwork material made from threads or strips twisted or woven to form a regular pattern with spaces between the threads that is used for holding, carrying, trapping, or confining something.

Component	Component group	In scope?	Comments
Pouch	Bag or pouch	Yes	A preformed, flexible container, typically enclosed with a gusset seal at the bottom of the pack can be shaped/arranged to allow the pack to stand on shelf. Pouches are currently used in a wide range of packaging. Specifically, pouches can be for single-serve food item and as such may have integrated mouthpiece, which is not detachable. 'Pouch' also includes 'Envelopes', which are a predominantly flat container of flexible material having only two faces, and joined at three edges to form an enclosure. The non-joined edge provides a filling opening, which may later be closed by a gummed or adhesive flap, heat seal, tie string, metal clasp, or other methods. Also includes packages used for sterile products which may be torn open without touching the product inside (peel pouches).
Sachet	Bag or pouch	Yes	A small, sealed bag or packet containing a small quantity of a product, usually food related.
Barrel, cask or keg	Barrel or drum	Yes	This packaging component includes barrels, casks and kegs. Packaging of circular cross-section, with greater length than breadth, with convex sides and two ends of equal diameter. A barrel is normally made of wooden staves bound together with hoops. Note that barrels, casks and kegs are not classified as drums.
Drum	Barrel or drum	Yes	Plastic and steel containers of ≥20 L. Cylindrical packaging whose bottom end is permanently fixed to the body and top end (head) is either removable or non-removable. Note that barrels, casks and kegs are not classified as drums.
IBC – rigid	Barrel or drum	Yes	A rigid intermediate bulk container (RIBC) that is attached to a pallet or has the pallet integrated into the RIBC. The container is used for the transport and storage of fluids and other bulk materials. The construction of the IBC container and the materials used are chosen depending on the application. There are various types available in the marketplace: Foldable (collapsible) IBC Container, Plastic composite IBC Container, Wire Cage IBC Container, Steel IBC Container, and Stainless steel IBC Container.
Pail	Barrel or drum	Yes	Plastic or tin-plate steel containers of ≤20 L. Cylindrical packaging whose bottom end is permanently fixed to the body and top end (lid), if present, is removable.
Bottle	Bottle or jar	Yes	A container having a round neck of relatively smaller diameter than the body and an opening capable of holding a closure for retention of the contents. Specifically, a narrow-necked container as compared with a jug, jar or wide-mouth container. The cross section of the bottle may be round, oval, square, oblong, or a combination of these. The bottle may also have an integrated handle. Bottles generally are made of glass or plastics, but can also be earthenware or metal. Bottle may be disposable, recyclable, returnable, or reusable.
Jar	Bottle or jar	Yes	A rigid container made of glass, stone, earthenware, plastic or other appropriate material with a large opening, which is used to store products, (e.g. jams, cosmetics). Usually with a secure closure
Jug	Bottle or jar	Yes	A rigid container with a handle, and large opening or spout for holding and pouring liquids, generally with no secure closure. They can be cylindrical, round, oval, square, oblong, or a combination of these.
Aerosol	Can	Yes	A gas-tight, pressure-resistant container with a valve and propellant. When the valve is opened, propellant forces the product from the container in a fine or coarse spray pattern or stream. (e.g. a spray can dispensing paint, furniture polish, etc, under pressure). It does not include atomizers, because atomizers do not rely on a pressurised container to propel product from the container.
Can	Can	Yes	A metallic and generally cylindrical container of unspecified size. Generally unpressurised.
Box	Carton or box	Yes	A non-specific term used to refer to a rigid, three-dimensional container with closed faces that completely enclose its contents and may be made out of any material.
Carton	Carton or box	Yes	A non-specific term for an open or re-closable container used mostly for perishable foods (e.g. eggs, or fruit). Includes aseptic

Component	Component group	In scope?	Comments
			PCPB packs or 'bricks', which are defined as rectangular-shaped, stackable packages designed primarily for liquids such as juice or milk. Includes gable top PCPB cartons, which are rectangular-shaped, non-stackable packages designed primarily for liquids such as juice or milk.
Crate (single-use)	Carton or box	Yes	A non-specific term usually referring to a rigid three-dimensional container with semi-closed faces that enclose its contents for shipment or storage. Crates could have an open or closed top and may have internal dividers.
Wrap or basket	Carton or box	Yes	Cardboard (typically) wraps and baskets for beer, soft drink, ready to drink pre-mix beverages, and multi-packs of single-serve food containers or tins. Note that non-beverage 'wrappers' are defined as a separate packaging component, and in a different component group.
Closure	Closure	Yes	Lids, caps, stoppers and all other closures.
Hook, kimble, affixing item	Closure	Yes	Includes: hooks for hanging clothing or displays; plastic kimbles that attach tags, accessories, and similar to clothing; string or other methods of attaching tags and accessories to clothing; and any other item that is used to link, attach or fix something temporarily to a product prior to sale.
Label	Label or seal	Yes	Separately affixed labels, that is, labels that are a separate component and are not printed directly onto packaging components with other major functions. Can include stickers,
Seal	Label or seal	Yes	Containment, freshness or safety seals on rigid containers. Usually plastic, polymer coated paper/paperboard, or aluminium foil.
Bin	Pallet or bin	Yes	A three-dimensional container which either has a pallet platform permanently attached at its base or alternatively requires a platform for its handling and storage as due to its constitution it cannot be handled without it. Also referred to as a 'pallet box'.
Cage	Pallet or bin	Yes	Includes containers enclosed on at least one side by a grating of wires or bars that lets in air and light.
Pallet	Pallet or bin	Yes	A platform used to hold or transport unit loads.
Skid	Pallet or bin	Yes	A group of parallel runners (usually made from timber) attached to a single top-desk or the undersides of boxes, crates, and machines to allow entry of platform trucks or fork lift tines. Unlike a pallet, a skid has no bottom deck.
Stillage	Pallet or bin	Yes	Includes containers enclosed on at least one side by a grating of wires or bars that lets in air and light.
Collapsible – RPC	Returnable plastic crate (RPC)	Yes	Collapsible RPCs typically used as B2B shelf ready packaging for transporting fruit and vegetables from farms to supermarkets. Also known as 'Reusable plastic crates'.
Non-collapsible – dairy	Returnable plastic crate (RPC)	Yes	Non-collapsible RPCs typically used as B2B shelf ready packaging for transporting milk bottles from dairy-processing companies to supermarkets.
Non-collapsible – non-dairy	Returnable plastic crate (RPC)	Yes	Non-collapsible RPCs typically used as B2B shelf ready packaging for transporting baked goods to retail outlets. The major example is bread trays.
Produce bag	Shopping bag	Yes	A bag intended for single-use, without handles, for holding fresh produce.
Reusable bag	Shopping bag	Yes	A bag with handles, intended for carrying shopping, multiple uses are possible.
Single-use bag	Shopping bag	Yes	A bag with handles, intended for carrying shopping and for single-use.
Other shopping bag	Shopping bag	Yes	Any other shopping bag, not already described in other categories.
Bowl	Tableware	Yes	Any size bowl, intended for single-use for takeaway food.
Cup	Tableware	Yes	Any size cup, intended for single-use for takeaway drinks. Can be made from polymer-coated paperboard (PCPB), polystyrene (PS) or expanded polystyrene (EPS).
Cup lid	Tableware	Yes	A closure for single-use cup, commonly made from polystyrene.

Component	Component group	In scope?	Comments
			Can also be from polypropylene (PP) or bioplastic (PLA).
Cutlery	Tableware	Yes	Any type of utensil, usually fork, knife, or spoon, or combination of two, intended for single-use. Can be part of a shelf product, or accompany take-away food. Usually made from plastic or wood(other stuff…?).
Plate	Tableware	Yes	Any size plate, intended for single-use for takeaway food.
Stirrer	Tableware	Yes	Intended for single-use, to stir drinks. Usually made of plastic.
Straw	Tableware	Yes	Any size straw, intended for single-use. Usually plastic or waxed paper.
Blister pack	Tub, tray or punnet	Yes	A type of packaging in which the item is secured between a thermoformed dome or “bubble” (usually transparent plastic) and a paperboard surface or “carrier.” This packaging component relates to the plastic bubble component only, not any non-plastic carrier. Attachment to the carrier may be by stapling, heat- sealing, gluing, or other means. In other instances, the blister folds over the product in clam-shell fashion to form an enclosing container. Blisters are often thermoformed from polyvinyl chloride. However, almost any thermoplastic can be thermoformed into a blister. Where a blister pack is made from a plastic polymer the packaging is usually thermoformed (sheet plastic is heated to soften and then placed into a mould).
Carrier	Tub, tray or punnet	Yes	The base of a blister pack. The base is what the preformed shape attaches to, by stapling, heat- sealing, gluing, or other means. The carrier is usually made of boxboard/cartonboard and often has labelling printed on it.
Pot	Tub, tray or punnet	Yes	A flat-bottomed container that has a base of any shape and which may or not be closed with a lid. Pots are usually made of cardboard, plastic, ceramic, metal or other materials and may be used for a wide array of products such as cosmetics, food/liquids, dairy products, plants.
Punnet or clamshell	Tub, tray or punnet	Yes	A punnet is a small box or square basket for the transport and sale of fruit and vegetables, typically for small fruits such as berries. Punnets can consist of a base only, a separable base and lid, or be a one-piece container consisting of a base and lid joined by a hinge area which allows the pack to come together to close. A clamshell is typically a one-piece container consisting of a base and lid joined by a hinge area which allows the pack to come together to close. The clamshell format is often also used in takeaway food packaging. NOTE: Punnets have base and closure of same material, so they are considered to be same component and weighed together. This is consistent with how the clamshell format is weighed. Where a punnet or clamshell is made from a plastic polymer the packaging is usually thermoformed (sheet plastic is heated to soften and then placed into a mould).
Tray	Tub, tray or punnet	Yes	A shallow container, usually rectangular, which may or may not have a cover, and is used for displaying or carrying items. The base is bigger than the height. It may have moulded pockets or forms for holding contents. Where a tray is made from a plastic polymer the packaging is usually thermoformed (sheet plastic is heated to soften and then placed into a mould).
Tub	Tub, tray or punnet	Yes	A flat-bottomed container that has a base of any shape and which may or not be closed with a lid. The height is usually greater than the base. Usually made of paper, plastic or other materials, these containers are typically used to contain mostly (but not exclusively) foods such as ice cream, margarine, yoghurt, sour cream, confections, etc. Includes 'cups', usually for smaller volume product.
Cartridge	Tube or cartridge	Yes	A rigid cylindrical container holding an item or substance, typically designed for insertion into a delivery mechanism.
Tube – flexible	Tube or cartridge	Yes	A flexible cylindrical container sealed on one end that could be closed with a cap or dispenser on the other end.
Tube – rigid	Tube or cartridge	Yes	A rigid cylindrical component for holding product around the outside, typically designed for holding and dispensing yarn, string or flexible films. Includes consumer packaging 'Reels' and 'Rolls'.

Component	Component group	In scope?	Comments
Fodder film or net wrap	Wrap	Yes	A plastic film or netting around a round or rectangular bale of agricultural fodder (e.g. hay) to protect the fodder from weather, maintain the bale integrity, and/or generally protect the fodder. Often referred to as silage wrap.
Pallet wrap	Wrap	Yes	A high-tensile plastic film, stretched and wrapped repeatedly around a pallet item or group of items to secure and maintain unit integrity. The use of stretch film to tightly wrap the pallet load is to bind, protect and immobilise it for further handling or shipping. This is specifically B2B use.
Shrink wrap	Wrap	Yes	A plastic film around an item or group of items which is heated causing the film to shrink, securing the film. The use of shrunken film to tightly wrap a package or a unit load in order to bind, protect and immobilise it for further handling or shipping.
Sleeve	Wrap	Yes	A non-rigid container usually made of paper, cardboard or plastic, that is open-ended and is slid over the contents for protection or presentation.
Strapping or banding	Wrap	Yes	Something used to bind, tie, or encircle the item or its packaging to secure and maintain unit integrity. Includes packaging tape. Includes baling twine, and other forms of packaging twines.
Stretch wrap	Wrap	Yes	A high-tensile plastic film, stretched and wrapped around an item or group of items to secure and maintain unit integrity. The use of stretch film to tightly wrap a package or a unit load in order to bind, protect and immobilise it for further storage, handling or shipping. This mainly includes B2C use.
Wrapper	Wrap	Yes	The process of enclosing all or part of an item with layers of flexible wrapping material (e.g. chocolate blocks). Does not include items which are shrink-wrapped or vacuum-packed. Note that cardboard beverage 'wraps' are defined as a separate packaging component, and in a different component group.
Absorbent	Other component group	Yes	Pouches, sachets or similar filled with an absorbent material or chemical for absorbing liquids or gases. Often used to extend the shelf-life of fresh foods but also used with clothing, electronic items, papergoods and other products.
Applicator	Other component group	Yes	Includes balls for roll-on deodorants, pump dispensers from sprays and atomizers, and the tubing and springs that accompany such, and any other fitting that is used to apply a product. Also includes plastic components used to present goods at point of sale, such as plastic components used to present and hold disposable razors and razor blades.
Basket	Other component group	No	A semi rigid container usually open at the top traditionally used for gathering, shipping and marketing agricultural products.
Coat hanger	Other component group	Yes	Coat hangers for clothes.
Dunnage	Other component group	No	Loose wood, matting, or similar material used to keep a cargo in position during sea, road or air transport.
Rack	Other component group	No	A nonspecific term identifying a framework or stand for carrying, holding, or storing items. Commonly on wheels and primarily used in the logistical functions to deliver items such as hanging garments, or items on shelves such as dairy products and bakery items and flowers.
Reel	Other component group	Yes	A B2B spool on which thread, wire, film, etc, is wound. Any device on which a material may be wound. Usually has flanged ends and is used for shipping or processing purposes.
Slip sheet	Other component group	Yes	A strong sheet of plastic, cardboard or other material which may be grabbed, hooked or attached to a forklift or other transportation equipment. The slip sheet is used to pull the products stacked on top of it, i.e. to remove all products from a pallet in one action.
Void fill	Other component group	Yes	Materials use to prevent goods from moving around and being damaged within secondary freight packaging (typically corrugated cardboard boxes). Types of void fill include bubble wrap, creased kraft paper and EPS foam.
Other component	Other component group	Yes	Packaging components not currently specified on the list.

Table B-9 provides a reference list of identified reusable packaging systems known to be operating in Australia during 2023–24.

Table B-9 – Reusable packaging systems.

Reusable packaging system	Packaging level	Sector of use	Profiled in 2023–24
Kegs for beer & cider	Primary	B2B	Yes
Kegs for milk	Primary	B2B + B2C	No
Plastic crates – Collapsible – RPCs	Secondary	B2B	Yes
Plastic crates – Non-collapsible – Dairy	Secondary	B2B	Yes
Reusable pallets – Plastic	Tertiary	B2B	Yes
Reusable pallets – Timber	Tertiary	B2B	Yes
Reusable shopping bags – LDPE bags (supermarket type)	Secondary	B2C	Yes
Reusable shopping bags – Non-woven PP bags	Secondary	B2C	Yes
Barrels and drums	Primary	B2B	Yes
Beverage bottles	Primary	B2C	No
Coat hangers	Primary	B2C	No
Cups/mugs	Primary	B2C	Yes
Gas cylinders – BBQ gas bottles	Primary	B2C	No
Gas cylinders – Compressed CO_2 cylinders for home beverage carbonation	Primary	B2C	No
Intermediate bulk containers	Tertiary	B2B	Yes
Kegs – Other beverages	Primary	B2B	No
Metal stillages	Tertiary	B2B	No
Pallet slip sheets, wrapping and strapping	Tertiary	B2B	No
Plastic crates – Non-collapsible – Non-dairy	Secondary	B2B	No
Plastic crates – Trays	Secondary	B2B	No
Produce bins	Tertiary	B2B	No
Reusable consumer packaging	Primary	B2C	No
Tableware	Primary	B2C	No
Toner cartridges	Primary	B2C + B2B	No

Appendix C – Jurisdictional data

This section provides consumption (POM) and recovery data for Australia (**Table C-1**) and for each of the states and territories (**Tables C-2 to C-9**).

The state/territory level data reported here was primarily captured through the two main surveys, on packaging manufacturers (POM data), and packaging reprocessing facility operators (recovery data). As part of both surveys, respondents were surveyed on the destination (for POM) and source (for recovery), by jurisdiction.

Many of the packaging manufacturers, particularly the larger manufacturers, could not provide accurate data on the destination jurisdictions for their packaging. For these respondents, packaging POM was allocated to states/territories on a per capita basis.

Imports of packaging POM (both empty and filled) were allocated to states/territories on a per capita basis.

Australian Customs data on scrap packaging exports was also obtained and analysed at the state/territory source level to provide information on the source jurisdiction for exported scrap packaging.

Table C-1 – Australian packaging consumption and recovery data in 2023–24, by material group.

Material group	POM (tonnes)	Recovery (tonnes)	Recovery rate (%)
Paper & paperboard	3,693,000	2,437,000	66%
Glass	1,063,000	851,000	80%
Plastic	1,269,000	255,000	20%
Metal	289,000	161,000	55%
Wood	523,000	302,000	58%
Total	**6,837,000**	**4,007,000**	**59%**

Table C-2 – ACT packaging consumption and recovery data in 2023–24, by material group.

Material group	POM (tonnes)	Recovery (tonnes)	Recovery rate (%)
Paper & paperboard	64,000	45,000	70%
Glass	19,000	8,000	43%
Plastic	22,000	2,000	11%
Metal	5,000	2,000	49%
Wood	9,000	0	0%
Total	**119,000**	**58,000**	**49%**

1. The recovery and recovery rate of glass packaging, as reported in the table, are likely lower than the true values due to packaging material being transferred to other jurisdictions for reprocessing (e.g. NSW), but the true source state jurisdiction is not known or reported by reprocessors in the receiving jurisdictions.

Table C-3 – NSW packaging consumption and recovery data in 2023–24, by material group.

Material group	POM (tonnes)	Recovery (tonnes)	Recovery rate (%)
Paper & paperboard	1,152,000	779,000	68%
Glass	332,000	199,000	60%
Plastic	392,000	92,000	23%
Metal	91,000	48,000	53%
Wood	163,000	71,000	44%
Total	**2,129,000**	**1,188,000**	**56%**

Table C-4 – NT packaging consumption and recovery data in 2023–24, by material group.

Material group	POM (tonnes)	Recovery (tonnes)	Recovery rate (%)
Paper & paperboard	35,000	5,000	15%
Glass	10,000	4,000	38%
Plastic	11,000	1,000	5%
Metal	3,000	2,000	67%
Wood	5,000	0	0%
Total	**64,000**	**12,000**	**18%**

Table C-5 – QLD packaging consumption and recovery data in 2023–24, by material group.

Material group	POM (tonnes)	Recovery (tonnes)	Recovery rate (%)
Paper & paperboard	758,000	634,000	84%
Glass	218,000	143,000	65%
Plastic	262,000	22,000	8%
Metal	59,000	42,000	71%
Wood	107,000	101,000	94%
Total	**1,405,000**	**942,000**	**67%**

Table C-6 – SA packaging consumption and recovery data in 2023–24, by material group.

Material group	POM (tonnes)	Recovery (tonnes)	Recovery rate (%)
Paper & paperboard	255,000	166,000	65%
Glass	73,000	NR	NR
Plastic	87,000	14,000	17%
Metal	20,000	12,000	58%
Wood	36,000	38,000	104%
Total	**471,000**	**379,000**	**80%**

Table C-7 – TAS packaging consumption and recovery data in 2023–24, by material group.

Material group	POM (tonnes)	Recovery (tonnes)	Recovery rate (%)
Paper & paperboard	78,000	36,000	46%
Glass	23,000	0	0%
Plastic	28,000	2,000	7%
Metal	6,000	2,000	36%
Wood	11,000	1,000	10%
Total	**145,000**	**41,000**	**28%**

1. The recovery and recovery rate of glass packaging, as reported in the table, are likely lower than the true values due to packaging material being transferred to other jurisdictions for reprocessing (e.g. Vic), but the true source state jurisdiction is not known or reported by reprocessors in the receiving jurisdictions.

Table C-8 – VIC packaging consumption and recovery data in 2023–24, by material group.

Material group	POM (tonnes)	Recovery (tonnes)	Recovery rate (%)
Paper & paperboard	948,000	619,000	65%
Glass	273,000	271,000	99%
Plastic	333,000	107,000	32%
Metal	74,000	35,000	47%
Wood	134,000	79,000	59%
Total	**1,762,000**	**1,111,000**	**63%**

Table C-9 – WA packaging consumption and recovery data in 2023–24, by material group.

Material group	POM (tonnes)	Recovery (tonnes)	Recovery rate (%)
Paper & paperboard	403,000	152,000	38%
Glass	116,000	79,000	68%
Plastic	135,000	15,000	11%
Metal	31,000	17,000	56%
Wood	57,000	12,000	21%
Total	**742,000**	**276,000**	**37%**

Appendix D – Employment and capacity data

This year the project included a quantification of 2023–24 packaging industry employment and facility capacity (existing and planned). This included:

- Packaging related employment by companies undertaking packaging manufacturing or reprocessing.
- Packaging related facility capacity (existing and planned). Planned capacity increases are those that relate to increased use of post-consumer packaging in manufacturing or post-consumer packaging reprocessing, and where capital works are approved and funded.

D.1 Packaging industry employment

Estimates of 2023–24 packaging related employment in terms of equivalent full-time employees (EFTE) are provided in **Table D-1** and **Table D-2**, by organisation type, for packaging manufacturers and reprocessors respectively. Employment is also normalised to 10,000 tonnes (or 10 kilotonnes, or 10 kt) of throughput to provide a standard basis for comparisons.

Table D-1 – Number of employees involved in packaging manufacturing related activities.

Organisation type	Employment	Normalised employment
	(EFTE)	(EFTE/10 kt)
Manufacturer – fibre	2,800	14.3
Manufacturer – glass	1,710	20.0
Manufacturer – plastics	8,370	111.1
Manufacturer – metals	850	37.1
Manufacturer – wood	360	10.0
Total	**14,090**	**33.9**

Table D-2 – Number of employees involved in packaging reprocessing related activities.

Organisation type	Employment	Normalised employment
	(EFTE)	(EFTE/10 kt)
Reprocessor – fibre	1,410	11.1
Reprocessor – glass	570	6.7
Reprocessor – plastics	570	38.3
Reprocessor – metals	0	0.0
Reprocessor – wood	160	0.0
Total	**2,710**	**10.5**

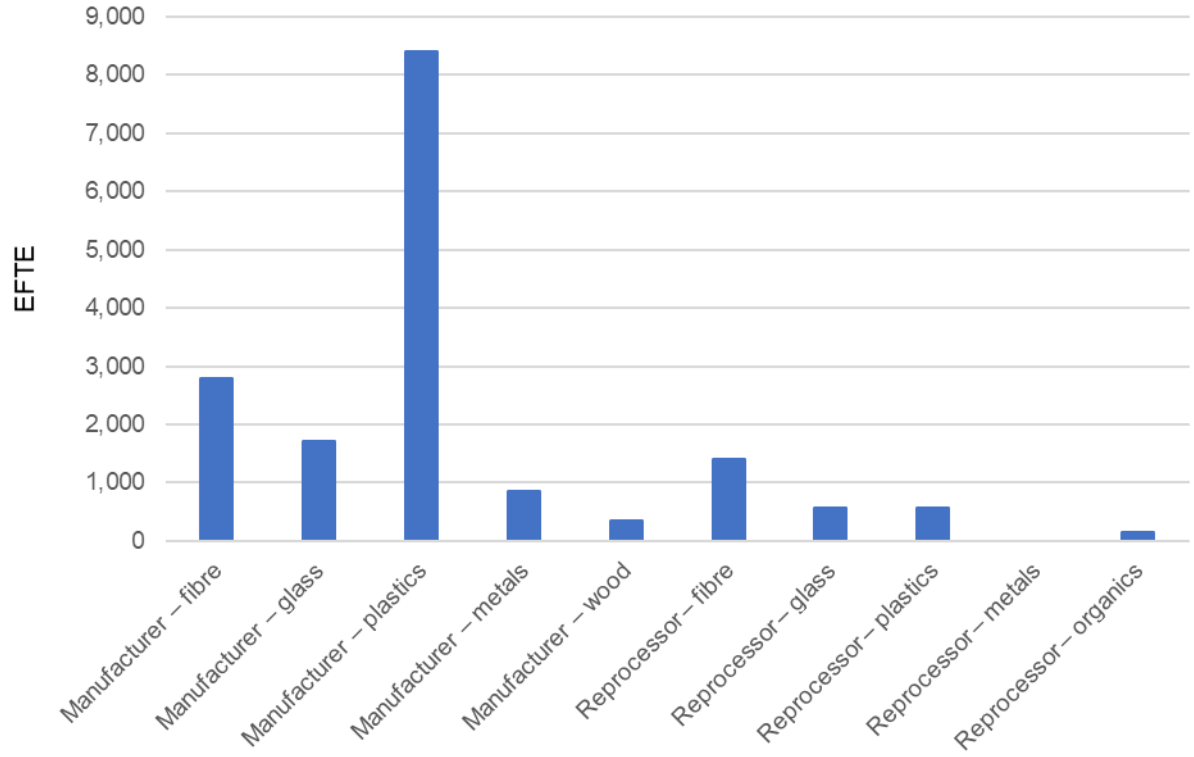

Figure D-1 – Number of employees involved in packaging related activities.

D.2 Facility capacities

D.2.1 Packaging manufacturers

Packaging manufacturers were surveyed to collect data on facilities (by count and quantity) with funded and approved plans to increase the use of post-consumer recycled content in packaging over the next few years. The summary results by facility count are provided in **Table D-3**, and by quantity of increased use of post-consumer packaging (tonnes) in **Table D-4**.

There are three major shifts between the 2022–23 and 2023–24 surveys:

- Glass packaging – In the 2022–23 survey glass packaging manufacturers reported plans to increase PCR content by 76 kt over the next few years.
- Plastic packaging – In the 2023–24 survey plastic packaging manufacturers reported plans to increase PCR content by 24 kt over the next few years.
- Metal packaging – In the 2023–24 survey metal packaging manufacturers reported plans to increase PCR content by 16 kt over the next few years.

Table D-3 – Number of manufacturing facilities with funded and approved plans to increase use of PCR content in packaging over the next few years, by material group.

Material group	Yes	No	Maybe	No response	Total
	(count)	(count)	(count)	(count)	(count)
Paper & paperboard	0	12	0	30	**42**
Glass	5	0	0	1	**6**
Plastic	37	88	11	42	**178**
Metal	1	11	0	6	**18**
Wood	0	1	0	5	**6**
Total	**43**	**112**	**11**	**84**	**250**

Table D-4 – Total tonnes of PCR content expected based on manufacturing facilities with funded and approved plans to increase use of PCR content in packaging over the next few years, by material group.

Material group	Yes	No	Maybe	No response	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Paper & paperboard	0	N/A	0	N/A	**0**
Glass	76,000	N/A	0	N/A	**76,000**
Plastic	24,000	N/A	0	N/A	**24,000**
Metal	16,000	N/A	0	N/A	**16,000**
Wood	0	N/A	0	N/A	**0**
Total	**116,000**	**N/A**	**0**	**N/A**	**116,000**

D.2.2 Packaging reprocessors – Existing capacity

Packaging reprocessors were surveyed to collect data on their average reprocessing capacity utilisation in 2023–24, by material type and capacity utilisation category. The summary results by utilisation category are provided in **Table D-5** and **Figure D-2**. The tonnages reported are the reprocessing throughput for the facilities that reported under each capacity utilisation category. These quantities are then converted to estimated 'spare' capacities in **Table D-5** and **Figure D-5**.

Table D-5 – Average reprocessing capacity utilisation in 2023–24, by material group and capacity utilisation category.

Material group	At <25% capacity	At <50% capacity	At 50% capacity	At 75% capacity	At 90% capacity	At capacity	Don't know	No response	Not applicable[a]	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Paper & paperboard	0	0	2,100	600	6,600	792,800	0	683,900	951,000	2,436,900
Glass	200	6,900	186,600	96,200	0	442,900	2,400	111,500	4,700	851,400
Plastic	9,100	21,100	23,100	63,600	30,700	6,600	1,400	19,300	80,500	255,400
Metal	200	0	0	0	1,800	0	0	100	158,500	160,500
Wood	0	0	1,500	4,800	0	0	0	0	296,200	302,400
Total	**9,500**	**28,000**	**213,300**	**165,200**	**39,000**	**1,242,300**	**3,800**	**814,700**	**1,490,900**	**4,006,700**

a) The 'Not applicable' quantity is mostly exported material. For wood packaging it refers to mulching and composting facilities.

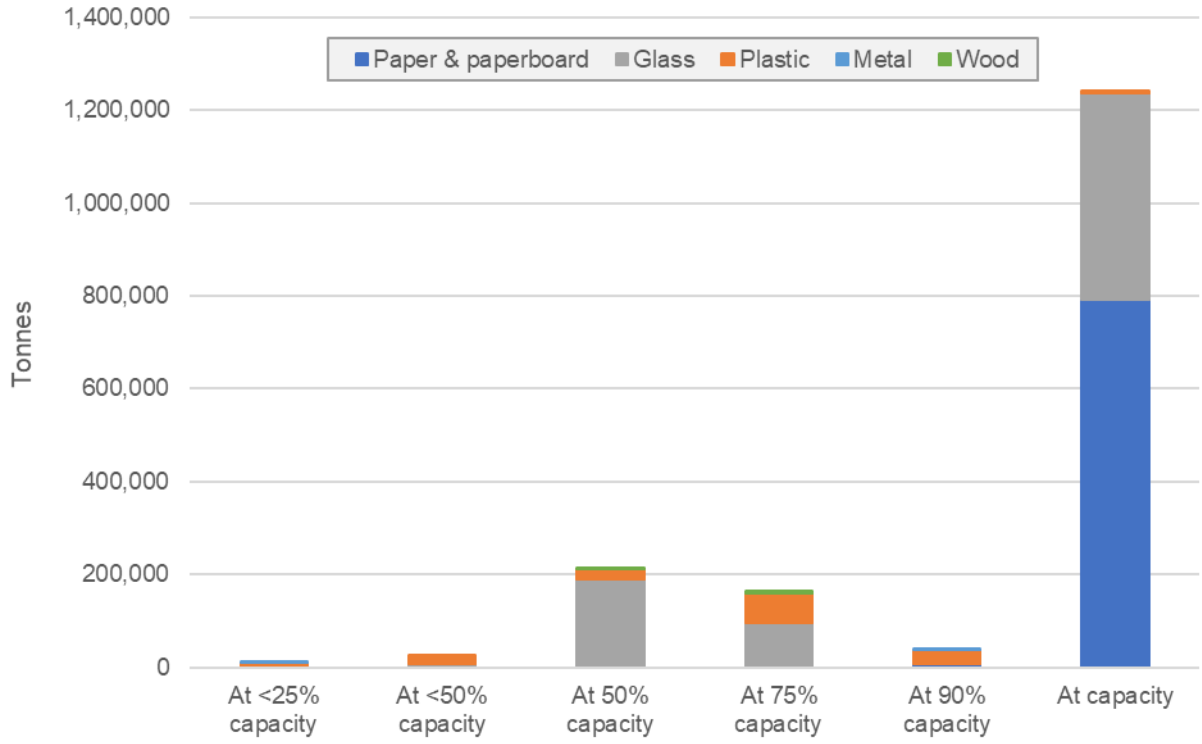

Figure D-2 – Average reprocessing capacity utilisation in 2023–24, by material group and capacity utilisation category (tonnes).

Table D-6 and **Figure D-3** present the estimated quantities of spare reprocessing capacity nationally in 2023–24. Total reported spare capacity was 442 kt, which is around 11% of local reprocessing. There would also have been some additional spare capacity at those reprocessors that did not report their capacity utilisation. For context, these reprocessors made up 20% of local reprocessing.

Table D-6 – Spare reprocessing capacity utilisation in 2023–24, by material group and capacity utilisation category.

Material group	At <25% capacity[a]	At <50% capacity[a]	At 50% capacity	At 75% capacity	At 90% capacity	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Paper & paperboard	0	0	2,100	200	700	**3,100**
Glass	2,000	20,700	186,600	32,100	0	**241,400**
Plastic	81,800	63,300	23,100	21,200	3,400	**192,900**
Metal	1,500	0	0	0	200	**1,700**
Wood	0	0	1,500	1,600	0	**3,100**
Total	**85,400**	**84,100**	**213,300**	**55,100**	**4,300**	**442,200**

a) Reprocessors that reported being at less than 25% capacity were assumed to be at 10% capacity utilisation, and at less than 50% capacity were assumed to be at 25% capacity utilisation, in calculating spare capacity.

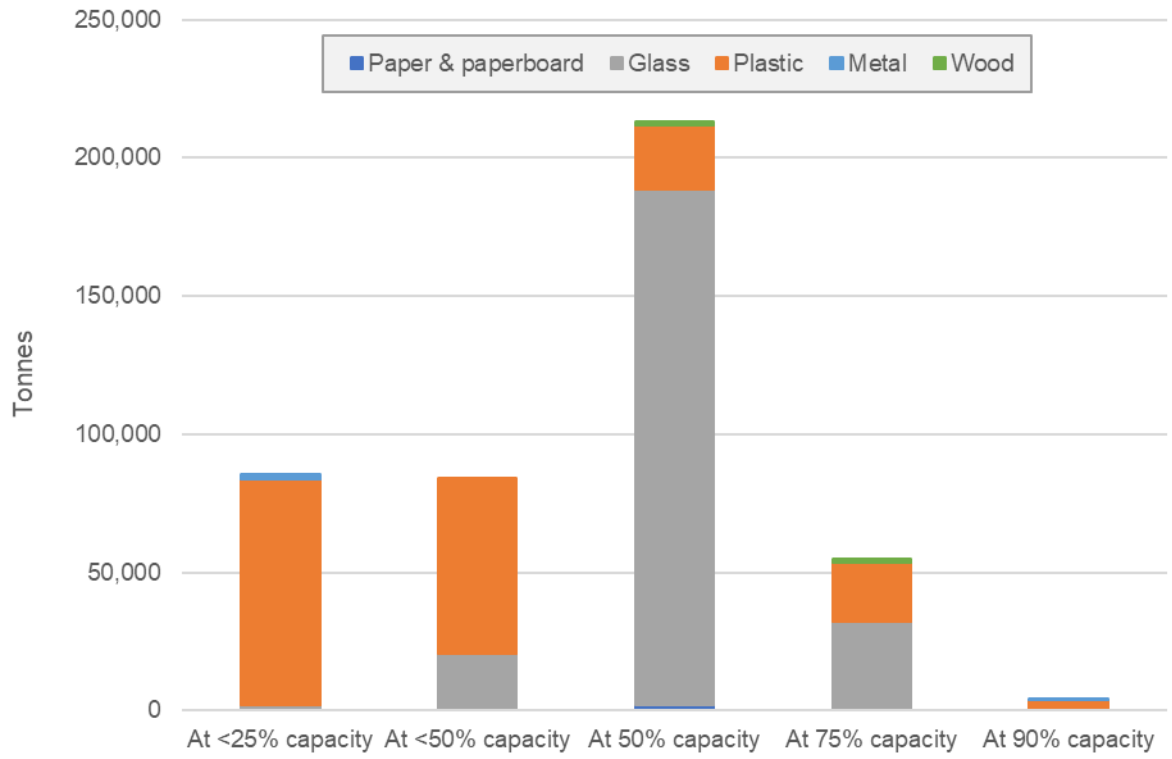

Figure D-3 – Spare reprocessing capacity utilisation in 2023–24, by material group and capacity utilisation category (tonnes).

D.2.3 Packaging reprocessors – Planned new capacity

Packaging reprocessors were surveyed to collect data on their funded and approved plans to increase reprocessing capacity over the next few years, by material type. The summary results by material group are provided in **Table D-7** and **Figure D-4**.

Table D-7 – Expected increase in reprocessing capacity over the next few years, by material group.

Material group	Quantity (tonnes)
Paper & paperboard	281,000
Glass	317,000
Plastic	557,000
Metal	1,000
Wood	5,000
Total	**1,160,000**

There were 1,160 kt of new reprocessing capacity reported to be in the pipeline, 48% of which was related to plastic packaging and 24% to glass packaging reprocessing. This is a 14% decrease on the planned new capacity (1,347 kt) reported for the 2022–23 packaging quantification study. Most of this apparent reduction in planned capacity relates to planned capacity in 2022–23 becoming operational in 2023–24.

The expected reprocessing capacity for plastics (557 kt) is a 14% increase on the projected increase in the 2022–23 survey (487 kt).

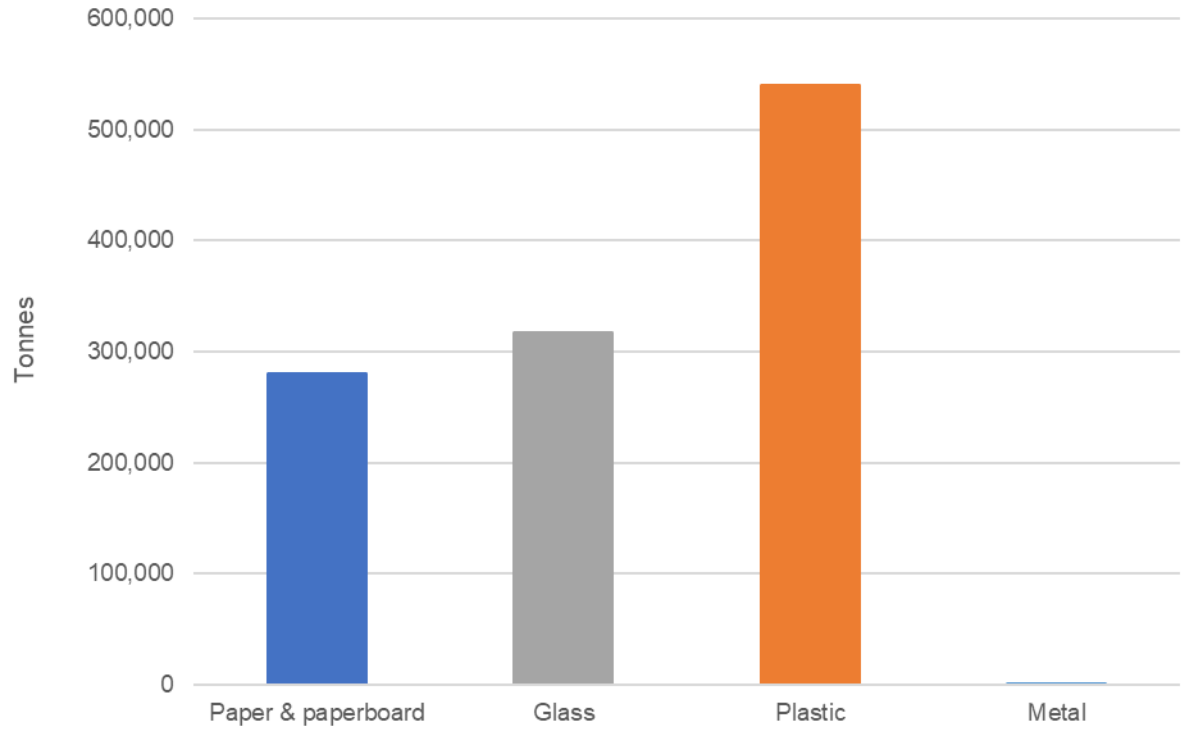

Figure D-4 – Expected increase in reprocessing capacity over the next few years, by material group (tonnes).

Appendix E – Container deposit eligible packaging data

This year the project has included the quantification of 2023–24 flows of container deposit (CD) eligible packaging, both POM and recovered by collection pathway.

The CD scheme operational dates covered by the data in this appendix are:

- ACT is full year 2023–24 (launched 30 June 2018).
- NSW is full year 2023–24 (launched 1 December 2017).
- NT is full year 2023–24 (launched 3 January 2012).
- QLD is full year 2023–24 (launched 1 November 2018).
- SA is full year 2023–24 (launched in 1977).
- TAS scheme commenced in May 2025 (no data in this appendix).
- VIC is partial year 2023–24 (launched November 2023).
- WA is full year 2023–24 (launched 1 October 2020).

The data provided in this section includes (in terms of both tonnes and package counts):

- CD eligible packaging POM by jurisdiction (Section E.1).
- CD eligible packaging redeemed via depots and reverse vending machines (Section E.2.1).
- CD eligible packaging redeemed via MRFs (Section E.2.2).
- CD eligible packaging unredeemed packaging recovered via MRFs and other pathways (Section E.2.3).
- Total collection of CD eligible packaging via all collection routes (Section E.2.4).
- Reprocessing destinations for CD eligible packaging (Section E.2.5).
- CD eligible packaging to landfill (Section E.3).

E.1 CD eligible packaging placed on market (POM)

Table E-1 – CD eligible packaging POM in 2023–24 by material type and jurisdiction (tonnes).

Material type	ACT	NSW	NT	QLD	SA	VIC	WA	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Beverage aluminium	920	21,750	900	29,810	5,980	11,450	8,950	79,770
Tin-plate steel	10	370	0	160	0	160	80	790
Amber glass	2,560	65,060	1,750	73,510	12,310	26,830	25,020	207,040
Flint glass	1,590	40,540	1,090	45,800	7,670	16,720	15,590	129,010
Green glass	1,920	48,880	1,320	55,230	9,250	20,160	18,800	155,570
PET (1) – Natural	1,120	29,200	1,000	30,440	5,820	15,360	11,030	93,970
PET (1) – Transparent	20	570	20	590	110	300	450	2,070
PET (1) – Opaque	0	50	0	50	10	20	0	130
HDPE (2) – Natural	50	880	660	1,550	310	260	510	4,230
HDPE (2) – Coloured	10	220	170	390	80	70	130	1,060
Other plastic (7)	0	10	0	0	0	0	0	20
PCPB – Aseptic	120	2,180	880	2,580	970	1,170	660	8,560
PCPB – Gable top	40	640	30	640	140	340	190	2,040
Other material	0	20	0	0	0	60	10	90
Total	**8,370**	**210,390**	**7,830**	**240,760**	**42,650**	**92,920**	**81,430**	**684,340**

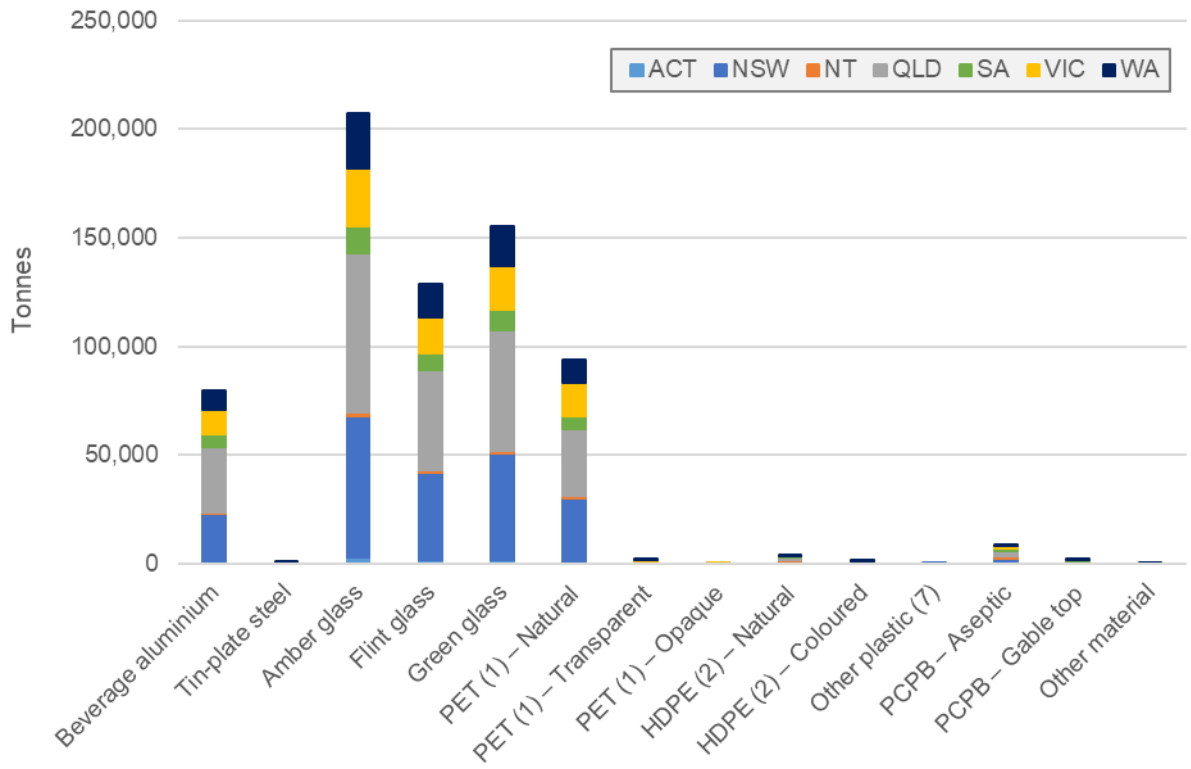

Figure E-1 – CD eligible packaging POM in 2023–24 by material type and jurisdiction (tonnes).

Table E-2 – CD eligible packaging POM in 2023–24 by material type and jurisdiction (million packs).

Material type	ACT	NSW	NT	QLD	SA	VIC	WA	Total
	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)
Beverage aluminium	66.734	1,580.628	57.613	1,447.178	436.832	845.700	655.020	5,089.705
Tin-plate steel	0.258	8.223	0.172	3.812	0.000	5.200	2.405	20.071
Amber glass	12.008	305.304	7.710	257.376	62.290	137.967	128.529	911.184
Flint glass	7.482	190.239	4.804	160.374	38.814	85.969	80.088	567.769
Green glass	9.023	229.398	5.793	193.386	46.803	103.665	96.573	684.641
PET (1) – Natural	46.368	1,210.171	36.778	874.766	222.200	640.230	444.772	3,475.287
PET (1) – Transparent	0.903	23.567	0.716	17.035	4.327	12.468	18.154	77.171
PET (1) – Opaque	0.073	1.893	0.058	1.369	0.348	1.002	0.000	4.741
HDPE (2) – Natural	1.414	25.983	2.921	43.914	19.752	9.440	20.135	123.558
HDPE (2) – Coloured	0.353	6.496	0.730	10.978	4.938	2.360	5.034	30.889
Other plastic (7)	0.058	0.821	0.000	0.000	0.000	0.100	0.000	0.979
PCPB – Aseptic	8.030	147.466	3.870	123.268	40.218	83.658	61.307	467.818
PCPB – Gable top	2.365	43.437	1.140	30.817	11.847	24.642	18.059	132.307
Other material	0.201	1.561	0.000	0.000	0.000	1.200	0.373	3.335
Total	**155.269**	**3,775.188**	**122.305**	**3,164.274**	**888.370**	**1,953.600**	**1,530.448**	**11,589.455**

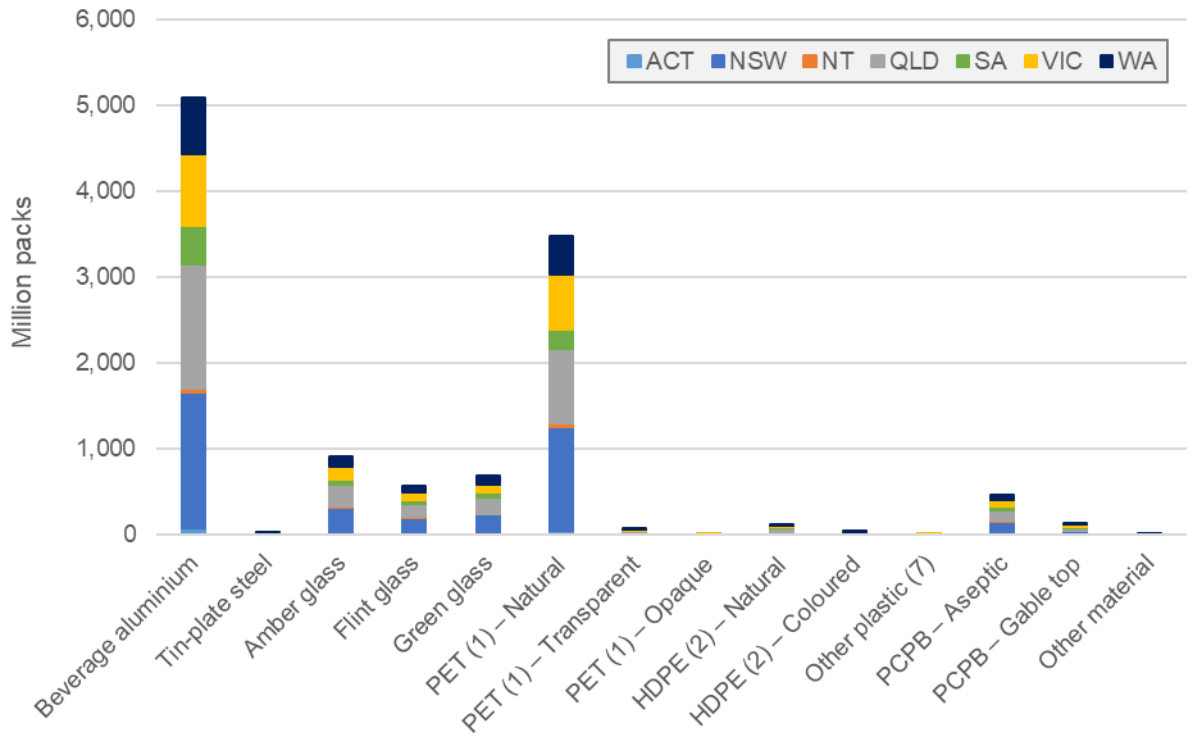

Figure E-2 – CD eligible packaging POM in 2023–24 by material type and jurisdiction (million packs).

E.2 CD eligible packaging collection

E.2.1 Redeemed collection via depots and reverse vending machines

Table E-3 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Redeemed collection via depots and reverse vending machines (tonnes).

Material type	ACT	NSW	NT	QLD	SA	VIC	WA	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Beverage aluminium	550	13,010	860	18,570	4,620	4,260	5,280	47,150
Tin-plate steel	0	150	0	60	0	30	50	280
Amber glass	1,210	39,770	1,750	47,800	10,380	9,130	16,990	127,020
Flint glass	750	24,780	1,090	29,780	6,470	5,690	10,590	79,150
Green glass	910	29,880	1,320	35,910	7,800	6,860	12,770	95,440
PET (1) – Natural	440	15,590	610	15,780	3,640	4,360	5,610	46,030
PET (1) – Transparent	10	300	10	310	70	80	230	1,020
PET (1) – Opaque	0	20	0	20	10	10	0	60
HDPE (2) – Natural	20	260	150	820	170	70	170	1,660
HDPE (2) – Coloured	0	70	40	200	40	20	40	420
Other plastic (7)	0	0	0	0	0	0	0	0
PCPB – Aseptic	30	450	390	660	480	110	180	2,300
PCPB – Gable top	10	130	10	170	70	30	50	470
Other material	0	20	0	0	0	50	0	70
Total	**3,920**	**124,430**	**6,240**	**150,080**	**33,740**	**30,710**	**51,950**	**401,070**
Redemption rate (%)[1]	**46.9%**	**59.1%**	**79.6%**	**62.3%**	**79.1%**	**33.0%**	**63.8%**	**58.6%**

1. Redemption % is relative to CD eligible packaging POM.

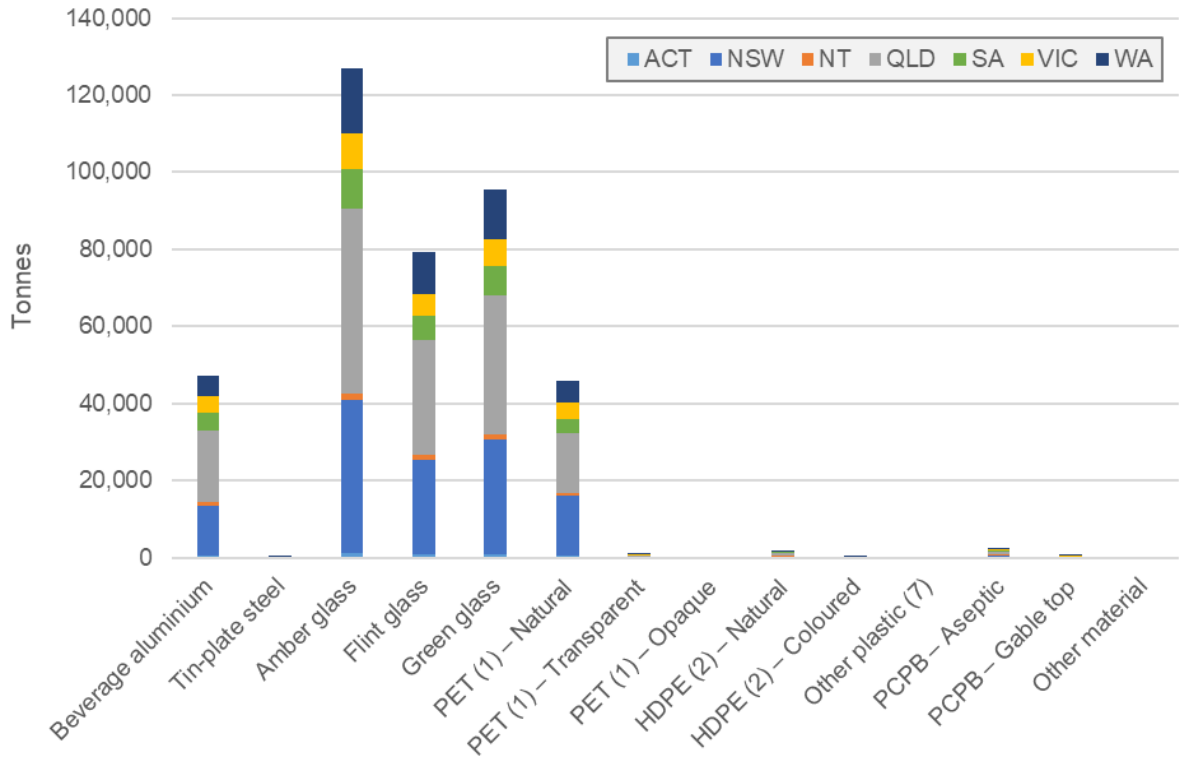

Figure E-3 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Redeemed collection via depots and reverse vending machines (tonnes).

Table E-4 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Redeemed collection via depots and reverse vending machines (million packs).

Material type	ACT	NSW	NT	QLD	SA	VIC	WA	Total
	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)
Beverage aluminium	39.815	945.501	54.732	901.577	337.531	314.600	386.200	2,979.956
Tin-plate steel	0.022	3.327	0.071	1.300	0.000	0.900	1.353	6.973
Amber glass	5.657	186.607	7.710	167.354	52.511	46.958	87.258	554.055
Flint glass	3.525	116.277	4.804	104.280	32.720	29.260	54.371	345.238
Green glass	4.251	140.212	5.793	125.746	39.455	35.283	65.563	416.303
PET (1) – Natural	18.341	645.956	22.435	453.384	138.897	181.874	226.345	1,687.230
PET (1) – Transparent	0.357	12.580	0.437	8.829	2.705	3.542	9.239	37.688
PET (1) – Opaque	0.029	1.011	0.035	0.709	0.217	0.285	0.000	2.286
HDPE (2) – Natural	0.562	7.777	0.672	23.187	10.766	2.560	6.570	52.095
HDPE (2) – Coloured	0.141	1.944	0.168	5.797	2.691	0.640	1.643	13.024
Other plastic (7)	0.000	0.027	0.000	0.000	0.000	0.003	0.000	0.031
PCPB – Aseptic	1.743	30.546	1.703	31.680	20.043	7.802	16.994	110.511
PCPB – Gable top	0.514	8.998	0.502	7.920	5.653	2.298	5.006	30.890
Other material	0.000	1.228	0.000	0.000	0.000	1.000	0.143	2.371
Total	**74.957**	**2,101.991**	**99.061**	**1,831.765**	**643.190**	**627.003**	**860.685**	**6,238.651**
Redemption rate (%)[1]	**48.3%**	**55.7%**	**81.0%**	**57.9%**	**72.4%**	**32.1%**	**56.2%**	**53.8%**

1. Redemption % is relative to CD eligible packaging POM.

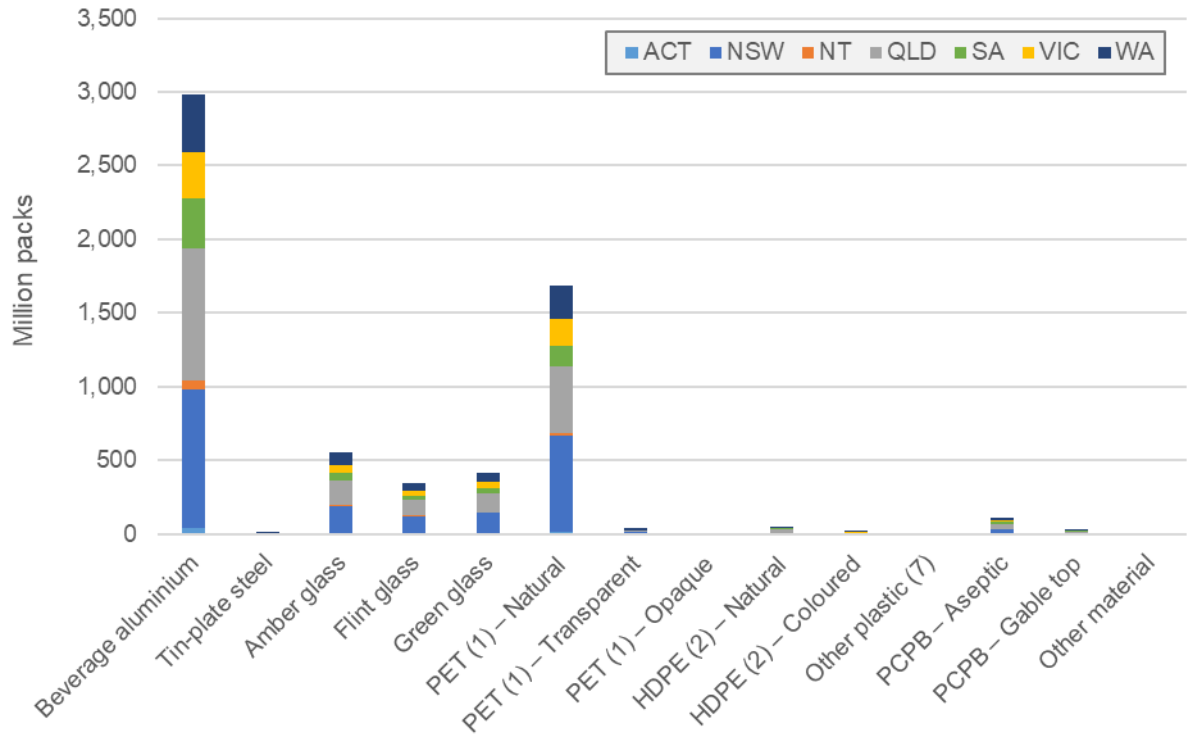

Figure E-4 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Redeemed collection via depots and reverse vending machines (million packs).

E.2.2 Redeemed collection via MRFs

Table E-5 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Redeemed collection via MRFs (tonnes).

Material type	ACT	NSW	NT	QLD	SA	VIC	WA	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Beverage aluminium	120	2,300	0	2,030	180	2,330	860	7,810
Tin-plate steel	0	0	0	0	0	0	0	0
Amber glass	540	11,740	0	16,890	0	6,750	3,080	39,000
Flint glass	340	7,320	0	10,520	0	4,210	1,920	24,300
Green glass	410	8,820	0	12,690	0	5,070	2,310	29,310
PET (1) – Natural	270	3,760	0	1,600	210	2,670	860	9,370
PET (1) – Transparent	10	70	0	30	0	50	40	200
PET (1) – Opaque	0	10	0	0	0	0	0	10
HDPE (2) – Natural	10	200	0	400	10	90	60	780
HDPE (2) – Coloured	0	50	0	100	0	20	20	190
Other plastic (7)	0	0	0	0	0	0	0	0
PCPB – Aseptic	0	0	0	0	0	0	0	0
PCPB – Gable top	0	0	0	0	0	0	0	0
Other material	0	0	0	0	0	0	0	0
Total	**1,700**	**34,270**	**0**	**44,270**	**400**	**21,200**	**9,140**	**110,980**
Redemption rate (%)[1]	**20.3%**	**16.3%**	**0.0%**	**18.4%**	**0.9%**	**22.8%**	**11.2%**	**16.2%**

1. Redemption % is relative to CD eligible packaging POM.

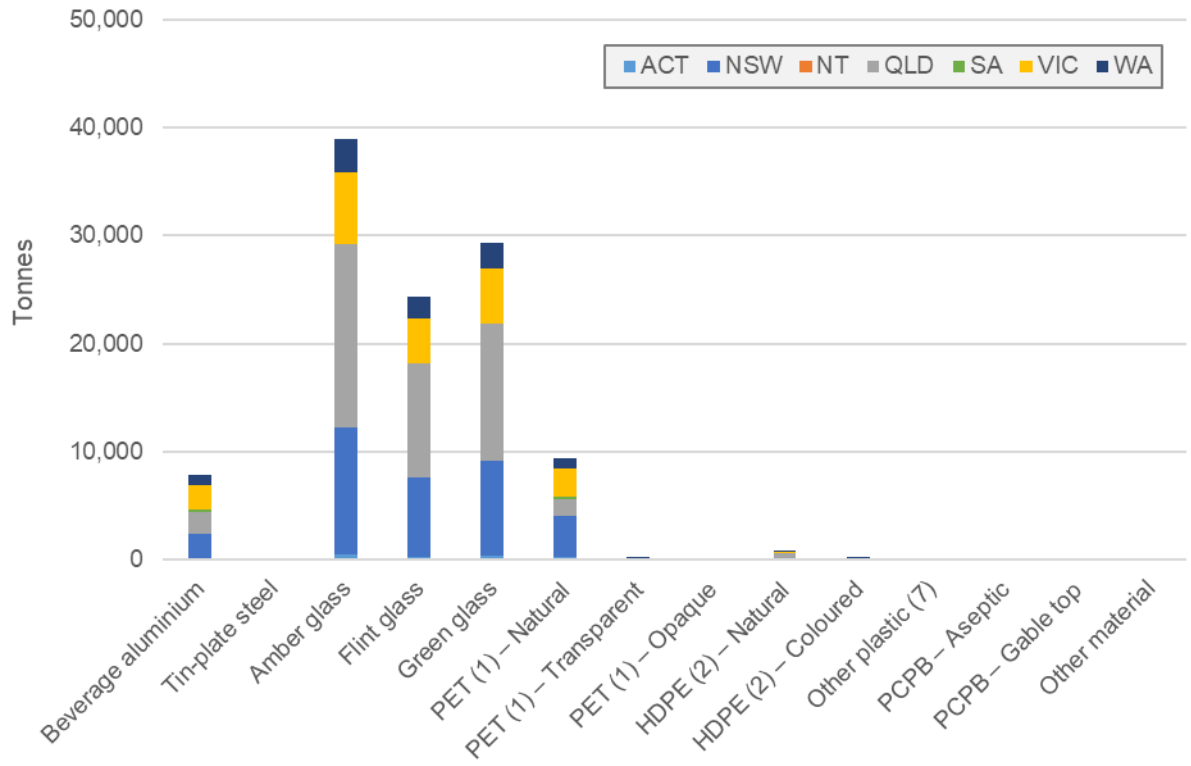

Figure E-5 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Redeemed collection via MRFs (tonnes).

Table E-6 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Redeemed collection via MRFs (million packs).

Material type	ACT	NSW	NT	QLD	SA	VIC	WA	Total
	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)
Beverage aluminium	8.869	166.907	0.000	98.423	13.007	171.812	63.013	522.031
Tin-plate steel	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Amber glass	2.553	55.108	0.000	59.137	0.000	34.711	15.796	167.305
Flint glass	1.591	34.338	0.000	36.849	0.000	21.629	9.843	104.250
Green glass	1.918	41.407	0.000	44.434	0.000	26.081	11.869	125.709
PET (1) – Natural	11.034	155.819	0.000	46.108	7.843	111.284	34.737	366.825
PET (1) – Transparent	0.215	3.034	0.000	0.898	0.153	2.167	1.418	7.885
PET (1) – Opaque	0.017	0.244	0.000	0.072	0.012	0.174	0.000	0.520
HDPE (2) – Natural	0.358	5.899	0.000	11.373	0.697	3.426	2.402	24.154
HDPE (2) – Coloured	0.089	1.475	0.000	2.843	0.000	0.856	0.601	5.864
Other plastic (7)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCPB – Aseptic	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCPB – Gable top	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other material	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	**26.645**	**464.231**	**0.000**	**300.135**	**21.712**	**372.141**	**139.678**	**1,324.543**
Redemption rate (%)[1]	**17.2%**	**12.3%**	**0.0%**	**9.5%**	**2.4%**	**19.0%**	**9.1%**	**11.4%**

1. Redemption % is relative to CD eligible packaging POM.

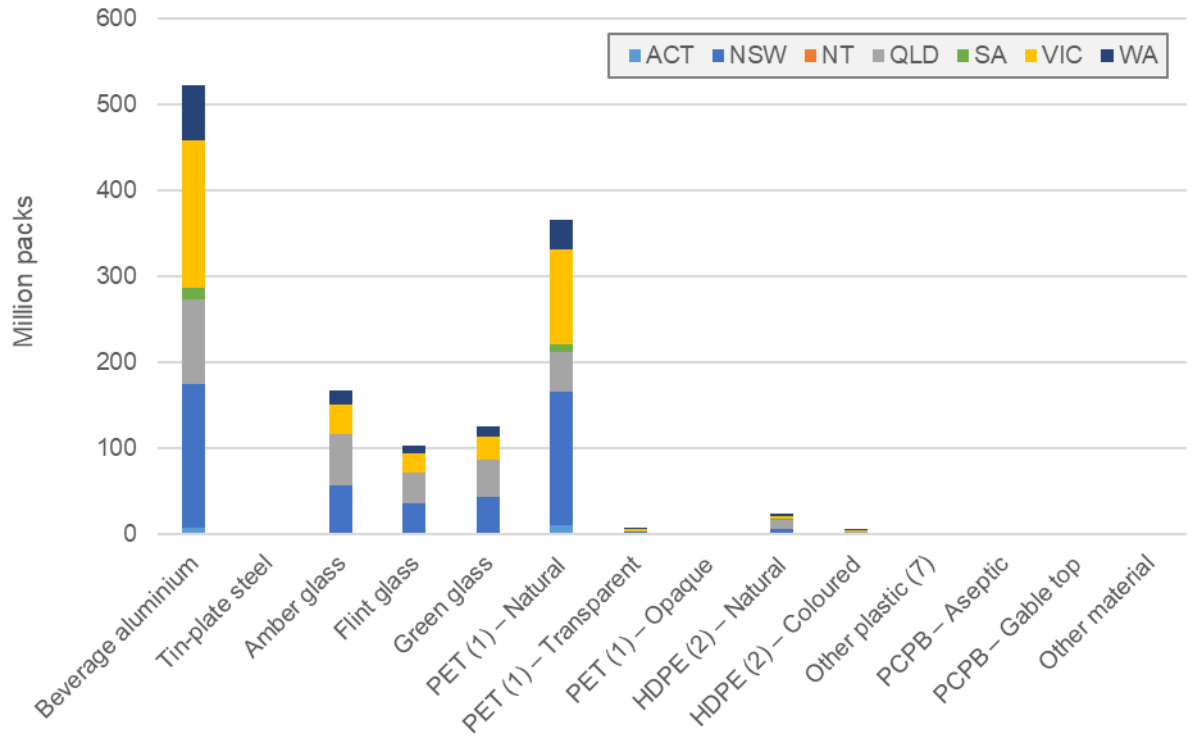

Figure E-6 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Redeemed collection via MRFs (million packs).

E.2.3 Unredeemed collection via MRFs and other pathways

While most CD eligible packaging collection in 2023–24 was via pathways that triggered the payment of a redeemed deposit, this was not always the case. There are a number of unredeemed collection pathways that exist, with differing levels of applicability to different jurisdictions. These unredeemed collection pathways included:

- MRF collection where the MRF operators may not have claimed the deposits for internal operational or administrative reasons.
- MRF collection where the published methods for claiming deposits in mixed CD eligible / CD ineligible streams did not cover all material types (e.g., LPB packaging), or otherwise had particular exceptions.
- MRF collection of CD eligible packaging recovered from some C&I sources.
- CD eligible packaging recovered through away-from-home recycling bins or events related recycling, in some circumstances.
- Alternative Waste Treatment (AWT) or Mechanical Biological Treatment (MBT) facility recovery of CD eligible packaging.

Provided here are estimates of the collection of unredeemed but CD eligible packaging during 2023–24. It is important to note that the earlier estimates of CD eligible packaging POM and redeemed CD eligible packaging are highly accurate as they are based on detailed regulated monthly or quarterly reporting. However, the collection estimates of unredeemed CD eligible packaging are estimates derived from industry surveys and are less precise.

Table E-7 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Unredeemed collection via MRFs and other pathways (tonnes).

Material type	ACT	NSW	NT	QLD	SA	VIC	WA	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Beverage aluminium	0	1,310	0	1,790	0	690	540	4,320
Tin-plate steel	0	40	0	30	0	50	0	120
Amber glass	0	3,900	0	4,410	0	1,610	1,500	11,430
Flint glass	0	2,430	0	2,750	0	1,000	940	7,120
Green glass	0	2,930	0	3,310	0	1,210	1,130	8,580
PET (1) – Natural	70	1,750	60	1,830	350	920	660	5,640
PET (1) – Transparent	0	30	0	40	10	20	30	120
PET (1) – Opaque	0	0	0	0	0	0	0	10
HDPE (2) – Natural	0	50	40	90	20	20	30	250
HDPE (2) – Coloured	0	10	10	20	0	0	10	60
Other plastic (7)	0	0	0	0	0	0	0	0
PCPB – Aseptic	0	0	0	0	60	0	0	60
PCPB – Gable top	0	0	0	0	10	0	0	10
Other material	0	0	0	0	0	0	0	0
Total	**80**	**12,460**	**110**	**14,270**	**450**	**5,520**	**4,830**	**37,720**
Collection rate (%)[1]	**0.9%**	**5.9%**	**1.4%**	**5.9%**	**1.0%**	**5.9%.**	**5.9%**	**5.5%**

1. Collection % is relative to CD eligible packaging POM.

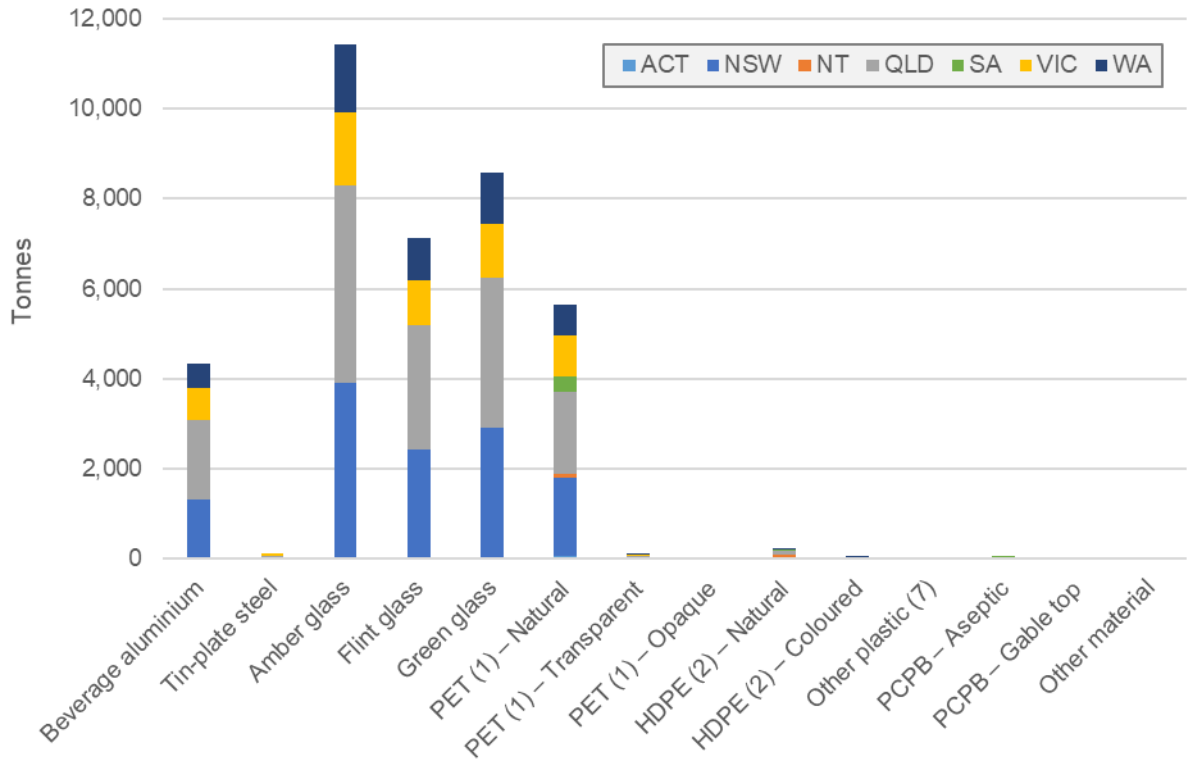

Figure E-7 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Unredeemed collection via MRFs and other pathways (tonnes).

Table E-8 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Unredeemed collection via MRFs and other pathways (million packs).

Material type	ACT	NSW	NT	QLD	SA	VIC	WA	Total
	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)
Beverage aluminium	0.000	94.838	0.000	86.831	0.000	50.742	39.301	271.712
Tin-plate steel	0.107	0.785	0.015	0.606	0.000	1.700	0.000	3.213
Amber glass	0.000	18.318	0.000	15.443	0.000	8.278	7.712	49.751
Flint glass	0.000	11.414	0.000	9.622	0.000	5.158	4.805	31.000
Green glass	0.000	13.764	0.000	11.603	0.000	6.220	5.794	37.381
PET (1) – Natural	2.782	72.610	2.207	52.486	13.332	38.414	26.686	208.517
PET (1) – Transparent	0.054	1.414	0.043	1.022	0.260	0.748	1.089	4.630
PET (1) – Opaque	0.004	0.114	0.003	0.082	0.021	0.060	0.000	0.284
HDPE (2) – Natural	0.085	1.559	0.175	2.635	1.185	0.566	1.208	7.413
HDPE (2) – Coloured	0.021	0.390	0.044	0.659	0.296	0.142	0.302	1.853
Other plastic (7)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCPB – Aseptic	0.000	0.000	0.000	0.000	2.413	0.000	0.000	2.413
PCPB – Gable top	0.000	0.000	0.000	0.000	0.711	0.000	0.000	0.711
Other material	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	**3.053**	**215.206**	**2.488**	**180.989**	**18.218**	**112.028**	**86.898**	**618.879**
Collection rate (%)[1]	**2.0%**	**5.7%**	**2.0%**	**5.7%**	**2.1%**	**5.7%**	**5.7%**	**5.3%**

1. Collection % is relative to CD eligible packaging POM.

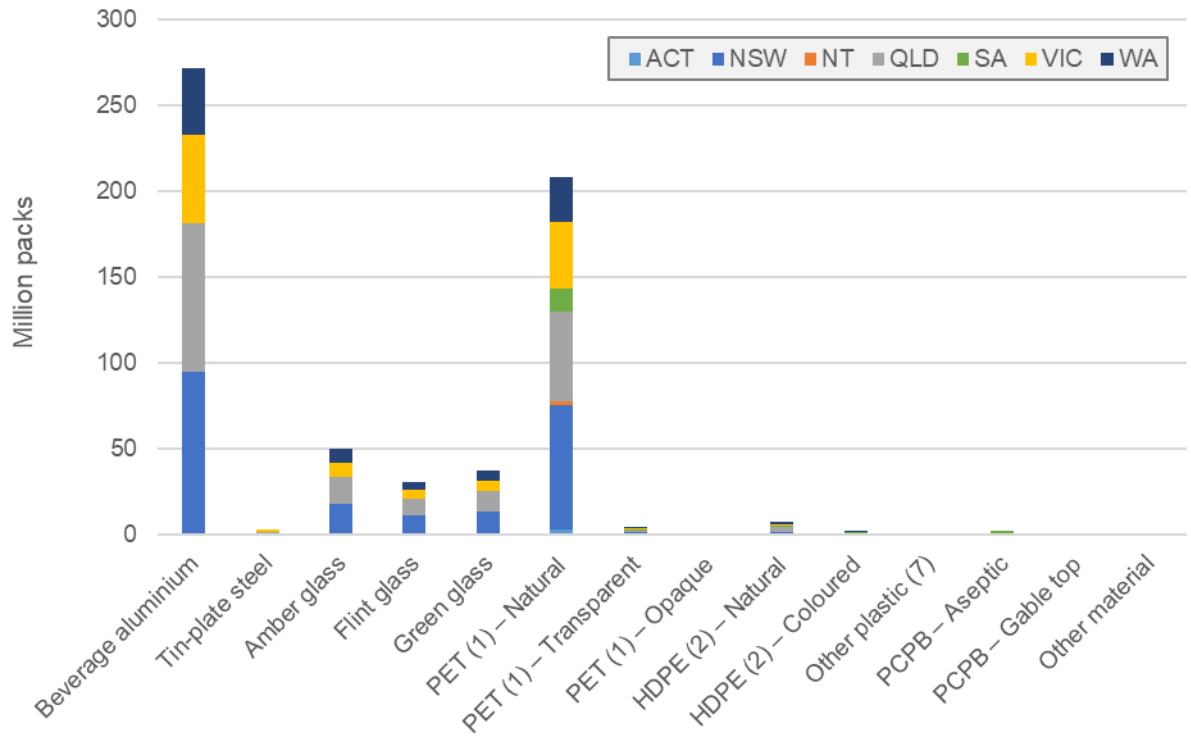

Figure E-8 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Unredeemed collection via MRFs and other pathways (million packs).

E.2.4 Total collection via all collection routes

Table E-9 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Total collection via all collection routes (tonnes).

Material type	ACT	NSW	NT	QLD	SA	VIC	WA	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Beverage aluminium	670	16,610	860	22,390	4,800	7,270	6,680	59,280
Tin-plate steel	10	180	0	80	0	80	50	400
Amber glass	1,750	55,410	1,750	69,100	10,380	17,490	21,570	177,450
Flint glass	1,090	34,530	1,090	43,050	6,470	10,900	13,440	110,570
Green glass	1,310	41,640	1,320	51,920	7,800	13,140	16,200	133,330
PET (1) – Natural	780	21,100	670	19,210	4,190	7,960	7,130	61,040
PET (1) – Transparent	20	410	10	370	80	150	290	1,340
PET (1) – Opaque	0	30	0	30	10	10	0	80
HDPE (2) – Natural	30	520	190	1,310	200	180	260	2,700
HDPE (2) – Coloured	10	130	50	330	50	50	70	670
Other plastic (7)	0	0	0	0	0	0	0	0
PCPB – Aseptic	30	450	390	660	540	110	180	2,360
PCPB – Gable top	10	130	10	170	80	30	50	480
Other material	0	20	0	0	0	50	0	70
Total	**5,700**	**171,170**	**6,350**	**208,620**	**34,580**	**57,440**	**65,920**	**549,770**
Collection rate (%)[1]	**68.1%**	**81.4%**	**81.1%**	**86.7%**	**81.1%**	**61.8%**	**80.9%**	**80.3%**

1. Collection % is relative to CD eligible packaging POM.

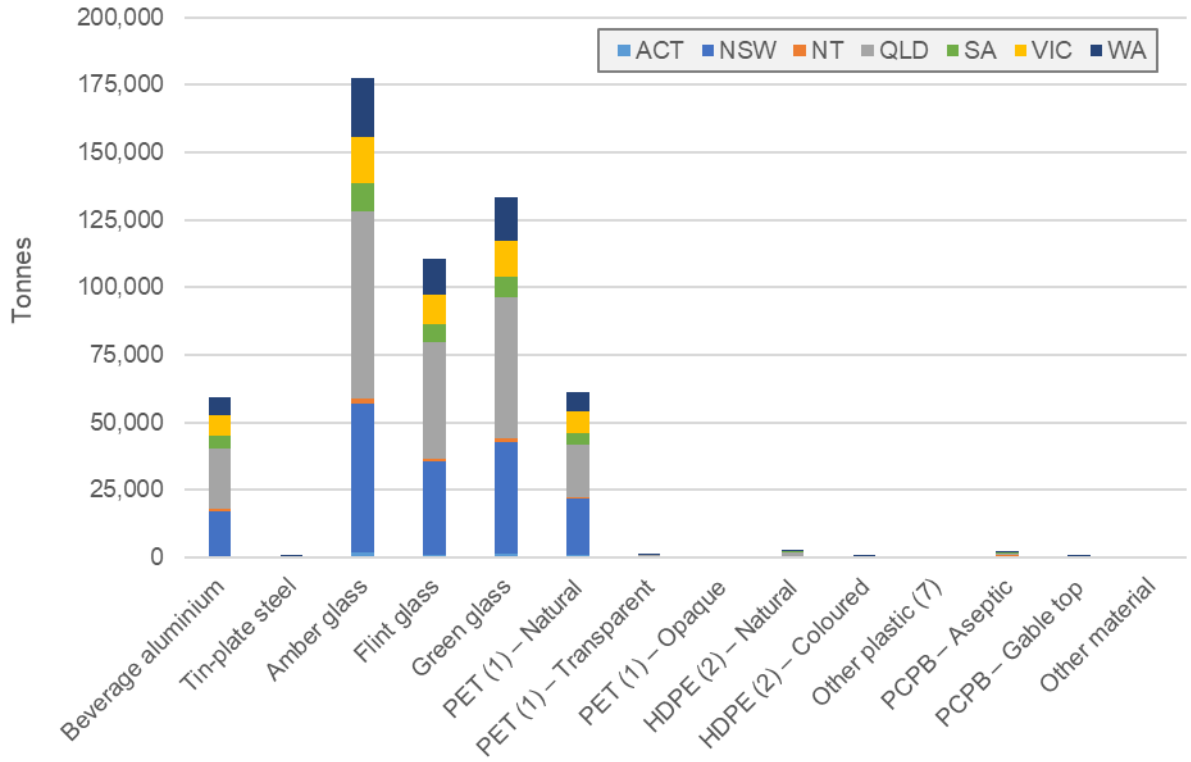

Figure E-9 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Total collection via all collection routes (tonnes).

Table E-10 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Total collection via all collection routes (million packs).

Material type	ACT	NSW	NT	QLD	SA	VIC	WA	Total
	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)
Beverage aluminium	48.684	1,207.245	54.732	1,086.831	350.538	537.154	488.514	3,773.698
Tin-plate steel	0.129	4.112	0.086	1.906	0.000	2.600	1.353	10.186
Amber glass	8.211	260.034	7.710	241.934	52.511	89.947	110.766	771.111
Flint glass	5.116	162.030	4.804	150.752	32.720	56.047	69.020	480.488
Green glass	6.169	195.383	5.793	181.783	39.455	67.584	83.227	579.393
PET (1) – Natural	32.157	874.385	24.642	551.977	160.072	331.571	287.768	2,262.572
PET (1) – Transparent	0.626	17.028	0.480	10.749	3.117	6.457	11.746	50.204
PET (1) – Opaque	0.050	1.368	0.039	0.864	0.250	0.519	0.000	3.090
HDPE (2) – Natural	1.005	15.235	0.847	37.195	12.648	6.552	10.180	83.663
HDPE (2) – Coloured	0.251	3.809	0.212	9.299	2.988	1.638	2.545	20.741
Other plastic (7)	0.000	0.027	0.000	0.000	0.000	0.003	0.000	0.031
PCPB – Aseptic	1.743	30.546	1.703	31.680	22.456	7.802	16.994	112.925
PCPB – Gable top	0.514	8.998	0.502	7.920	6.364	2.298	5.006	31.601
Other material	0.000	1.228	0.000	0.000	0.000	1.000	0.143	2.371
Total	**104.656**	**2,781.428**	**101.548**	**2,312.889**	**683.120**	**1,111.172**	**1,087.261**	**8,182.073**
Collection rate (%)[1]	**67.4%**	**73.7%**	**83.0%**	**73.1%**	**76.9%**	**56.9%**	**71.0%**	**70.6%**

1. Collection % is relative to CD eligible packaging POM.

Note: These collection rates may differ from published figures available elsewhere as they included estimates for non-redeemed CD eligible packaging that is collected through MRFs.

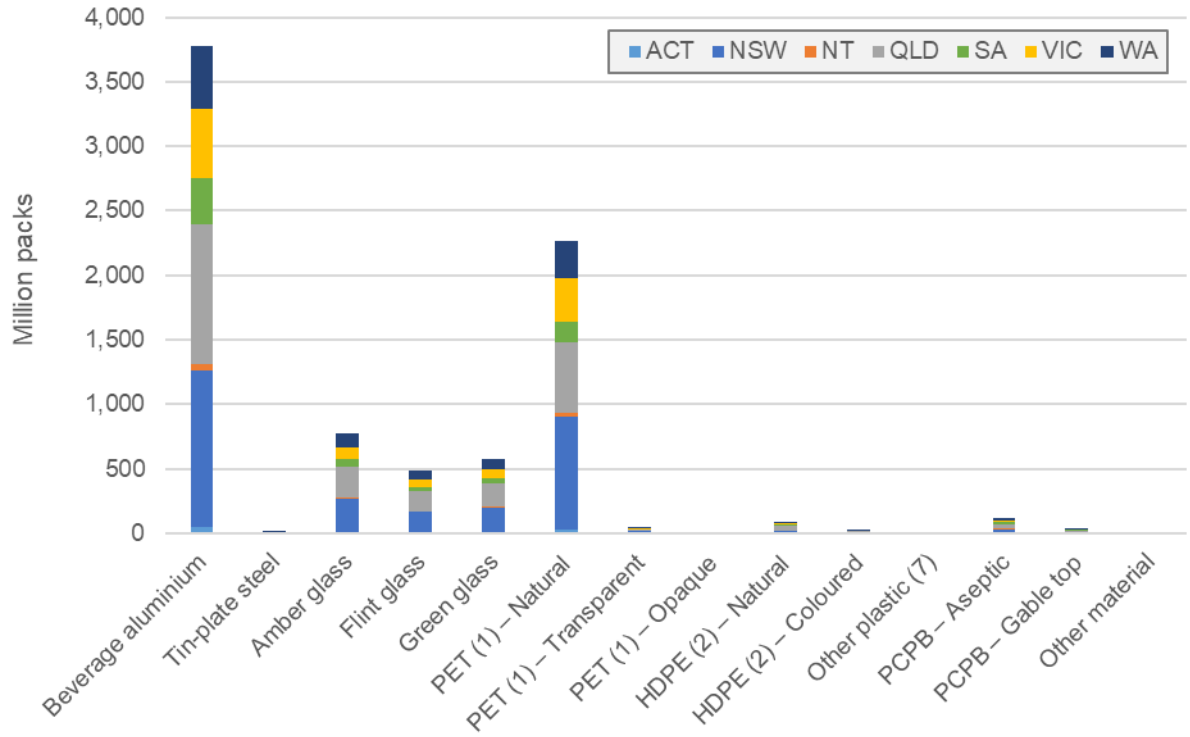

Figure E-10 – CD eligible packaging collection in 2023–24 by material type and jurisdiction – Total collection via all collection routes (million packs).

E.2.5 Reprocessing destination

Table E-11 – CD eligible packaging reprocessing destination in 2023–24 by material type (tonnes).

Material type	Local	Overseas	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Beverage aluminium	0	59,280	0	59,280
Tin-plate steel	20	270	100	400
Amber glass	177,450	0	0	177,450
Flint glass	110,570	0	0	110,570
Green glass	133,330	0	0	133,330
PET (1) – Natural	48,260	1,540	11,240	61,040
PET (1) – Transparent	560	570	220	1,340
PET (1) – Opaque	30	40	20	80
HDPE (2) – Natural	2,410	20	270	2,700
HDPE (2) – Coloured	600	0	70	670
Other plastic (7)	0	0	0	0
PCPB – Aseptic	830	1,110	420	2,360
PCPB – Gable top	170	220	90	480
Other material	40	0	20	70
Total	**474,270**	**63,050**	**12,460**	**549,770**

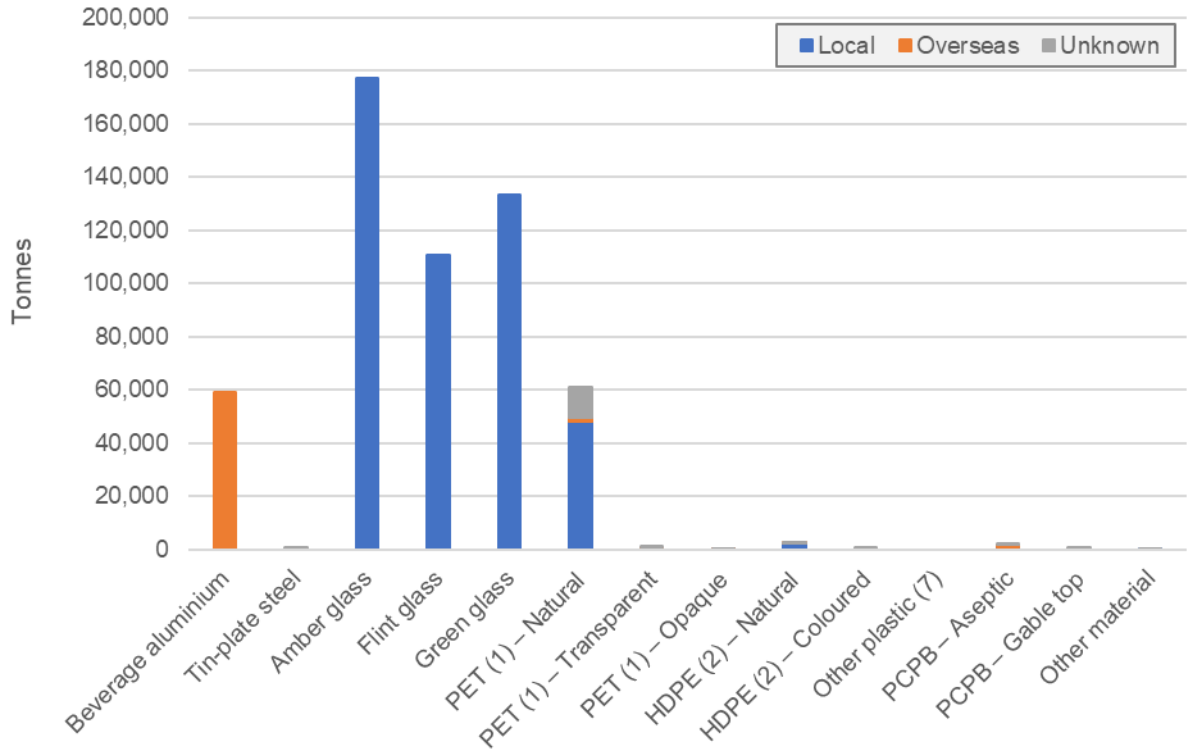

Figure E-11 – CD eligible packaging reprocessing destination in 2023–24 by material type (tonnes).

E.3 CD eligible packaging to landfill

The following tables provide estimates of CD eligible packaging disposed to landfill. These quantities are almost entirely based on estimates of CD eligible packaging disposal to landfill at the household level, and public place disposal where recycling systems are not available.

Table E-12 – CD eligible packaging to landfill in 2023–24 by material type and jurisdiction (tonnes).

Material type	ACT	NSW	NT	QLD	SA	VIC	WA	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Beverage aluminium	250	5,140	50	7,420	640	4,180	2,280	19,950
Tin-plate steel	10	180	0	80	0	80	40	390
Amber glass	810	9,650	0	4,410	0	9,340	3,460	27,660
Flint glass	500	6,010	0	2,750	0	5,820	2,150	17,240
Green glass	610	7,250	0	3,310	0	7,020	2,600	20,790
PET (1) – Natural	340	8,100	330	11,230	1,630	7,410	3,890	32,930
PET (1) – Transparent	10	160	10	220	30	140	160	720
PET (1) – Opaque	0	10	0	20	0	10	0	50
HDPE (2) – Natural	10	370	470	240	110	80	250	1,530
HDPE (2) – Coloured	0	90	120	60	30	20	60	390
Other plastic (7)	0	10	0	0	0	0	0	20
PCPB – Aseptic	90	1,730	490	1,920	430	1,060	480	6,200
PCPB – Gable top	30	510	20	480	70	310	140	1,550
Other material	0	0	0	0	0	10	0	20
Total	**2,670**	**39,220**	**1,480**	**32,140**	**2,940**	**35,480**	**15,510**	**129,450**

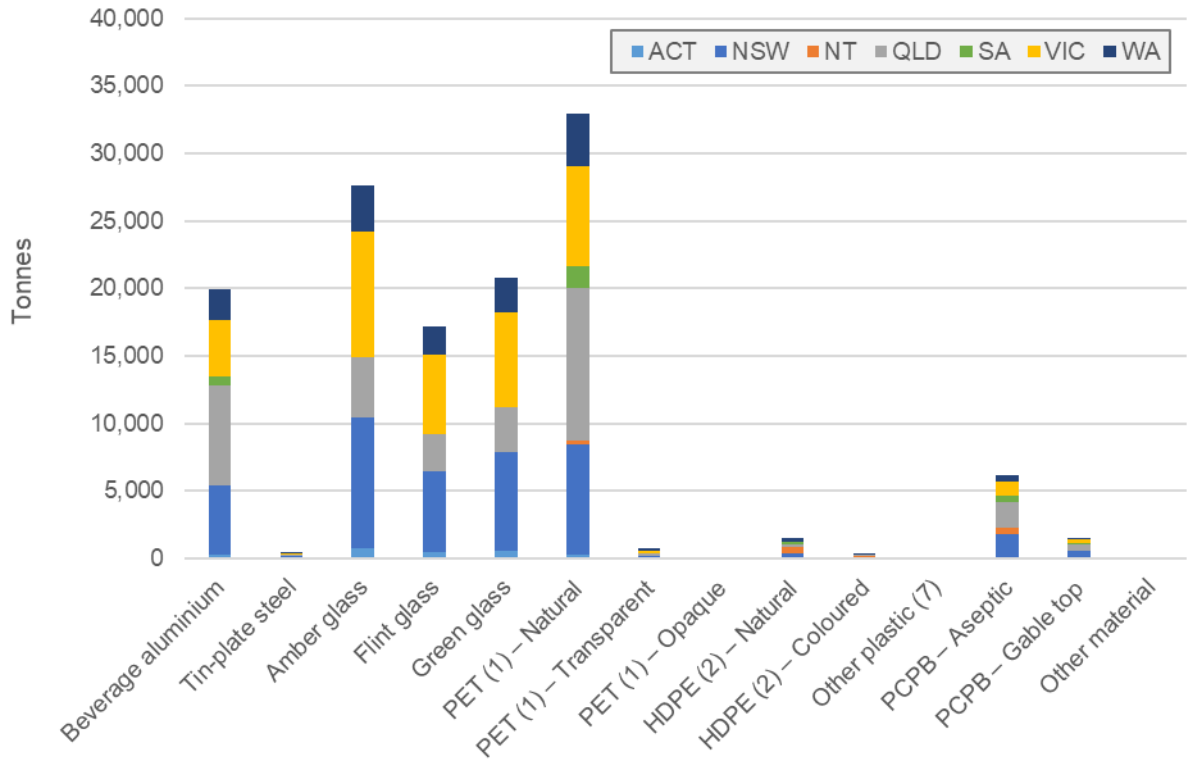

Figure E-12 – CD eligible packaging to landfill in 2023–24 by material type and jurisdiction (tonnes).

Table E-13 – CD eligible packaging to landfill in 2023–24 by material type and jurisdiction (million packs).

Material type	ACT	NSW	NT	QLD	SA	VIC	WA	Total
	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)	(million packs)
Beverage aluminium	18.050	373.382	2.881	360.347	46.939	308.546	166.506	1,276.652
Tin-plate steel	0.129	4.112	0.086	1.906	0.000	2.600	1.052	9.885
Amber glass	3.798	45.271	0.000	15.443	0.000	48.020	17.763	130.293
Flint glass	2.366	28.209	0.000	9.622	0.000	29.922	11.068	81.187
Green glass	2.853	34.015	0.000	11.603	0.000	36.081	13.346	97.899
PET (1) – Natural	14.211	335.786	12.137	322.789	62.128	308.659	157.005	1,212.714
PET (1) – Transparent	0.277	6.539	0.236	6.286	1.210	6.011	6.408	26.968
PET (1) – Opaque	0.022	0.525	0.019	0.505	0.097	0.483	0.000	1.652
HDPE (2) – Natural	0.409	10.748	2.074	6.719	7.104	2.888	9.955	39.895
HDPE (2) – Coloured	0.102	2.687	0.518	1.680	1.950	0.722	2.489	10.148
Other plastic (7)	0.058	0.794	0.000	0.000	0.000	0.097	0.000	0.948
PCPB – Aseptic	6.286	116.920	2.167	91.588	17.763	75.856	44.313	354.893
PCPB – Gable top	1.852	34.440	0.638	22.897	5.483	22.344	13.053	100.706
Other material	0.201	0.334	0.000	0.000	0.000	0.200	0.230	0.964
Total	**50.614**	**993.760**	**20.757**	**851.385**	**142.674**	**842.428**	**443.187**	**3,344.805**

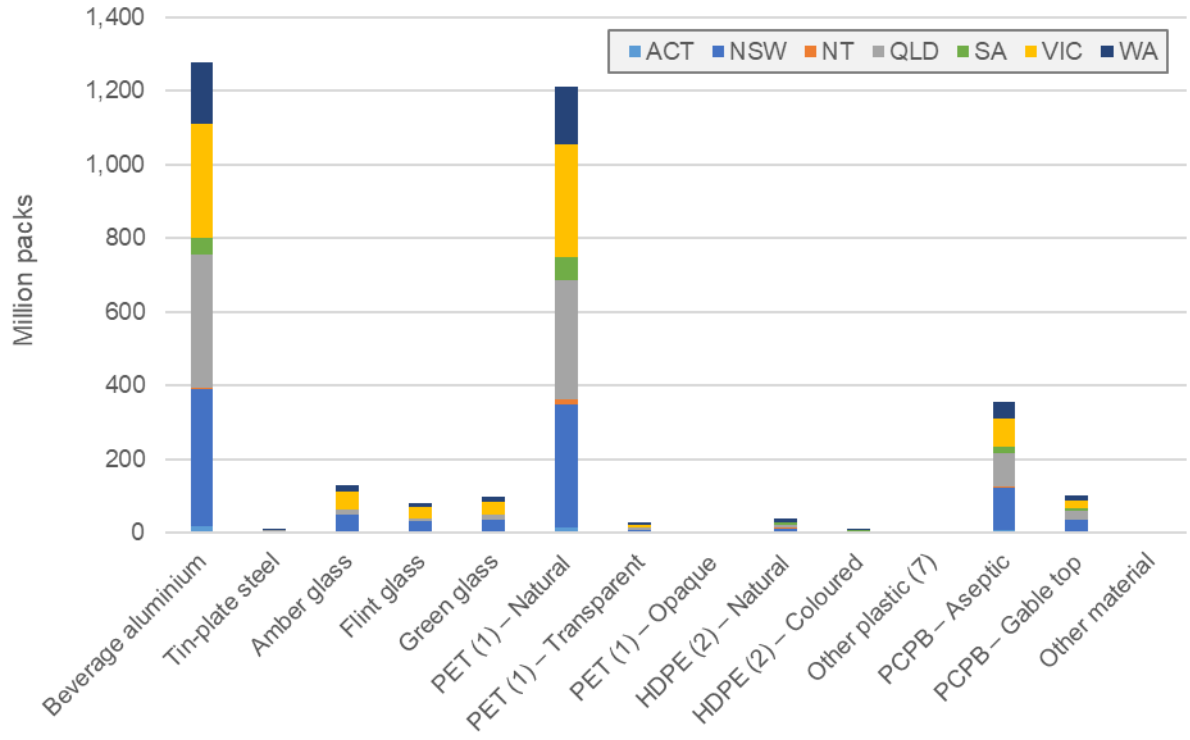

Figure E-13 – CD eligible packaging to landfill in 2023–24 by material type and jurisdiction (million packs).

Appendix F – Supporting data tables

F.1 Paper & paperboard packaging in 2023–24

F.1.1 Placed on market

Table F-1 – Paper & paperboard packaging POM (mass and per capita bases) from 2017–18 to 2023–24, by material type.

Material type	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23		2023-24	
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
Boxboard/ Cartonboard	181,000	7.3	288,000	11.3	316,000	12.3	315,000	12.2	320,000	12.3	301,000	11.3	307,000	11.3
Corrugated cardboard	2,408,000	96.4	2,544,000	100.4	2,513,000	98.0	2,539,000	98.8	2,772,000	106.6	2,897,000	108.7	2,789,000	102.6
HWS[b] carrierboard	15,000	0.6	20,000	0.8	25,000	1.0	31,000	1.2	25,000	1.0	23,000	0.9	27,000	1.0
Kraft paper	63,000	2.5	195,000	7.7	180,000	7.0	246,000	9.6	290,000	11.2	330,000	12.4	340,000	12.5
Moulded fibreboard	50,000	2.0	51,000	2.0	56,000	2.2	63,000	2.4	65,000	2.5	73,000	2.8	78,000	2.9
PCPB[c] – Aseptic	38,000	1.5	38,000	1.5	40,000	1.6	49,000	1.9	51,000	2.0	43,000	1.6	46,000	1.7
PCPB – Gable top	12,000	0.5	12,000	0.5	12,000	0.5	15,000	0.6	16,000	0.6	13,000	0.5	12,000	0.4
PCPB – Cold cup	6,000	0.2	6,000	0.2	13,000	0.5	8,000	0.3	8,000	0.3	9,000	0.3	8,000	0.3
PCPB – Hot cup	12,000	0.5	12,000	0.5	23,000	0.9	18,000	0.7	20,000	0.7	22,000	0.8	21,000	0.8
PCPB – Other	4,000	0.1	4,000	0.1	4,000	0.2	4,000	0.1	6,000	0.2	3,000	0.1	2,000	0.1
Polymer coated paper	112,000	4.5	94,000	3.7	1,000	0.1	1,000	0.1	1,000	0.1	2,000	0.1	2,000	0.1
Other fibre packaging	0	0.0	0	0.0	95,000	3.7	99,000	3.9	80,000	3.1	89,000	3.3	62,000	2.3
Total	**2,901,000**	**116.2**	**3,262,000**	**128.8**	**3,277,000**	**127.8**	**3,387,000**	**131.9**	**3,654,000**	**140.5**	**3,805,000**	**142.8**	**3,693,000**	**135.8**

a) kg/p – kilograms per person.
b) HWS – High wet strength.
c) PCPB – Polymer coated paperboard.
d) Examples of other fibre packaging include paper bags and food wraps.

Table F-2 – Paper & paperboard packaging POM in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Boxboard/Cartonboard	0	0	0	0	289,000	0	0	0	0	0	6,000	12,000	0	0	0	0	307,000
Corrugated cardboard	0	0	0	0	2,789,000	0	0	0	0	0	0	0	0	0	0	0	2,789,000
HWS carrierboard	1,000	0	0	0	20,000	0	0	0	0	0	0	5,000	0	0	0	0	27,000
Kraft paper	166,000	0	0	55,000	0	0	0	0	0	6,000	0	0	0	50,000	62,000	0	340,000
Moulded fibreboard	0	0	0	0	0	0	0	0	0	0	1,000	76,000	0	0	0	0	78,000
PCPB – Aseptic	0	0	0	0	46,000	0	0	0	0	0	0	0	0	0	0	0	46,000
PCPB – Gable top	0	0	0	0	12,000	0	0	0	0	0	0	0	0	0	0	0	12,000
PCPB – Cold cup	0	0	0	0	0	0	0	0	0	0	8,000	0	0	0	0	0	8,000
PCPB – Hot cup	0	0	0	0	0	0	0	0	0	0	21,000	0	0	0	0	0	21,000
PCPB – Other	0	0	0	0	0	0	0	0	0	0	1,000	0	0	0	1,000	0	2,000
Polymer coated paper	1,000	0	0	0	0	0	0	0	0	0	0	0	0	1,000	0	0	2,000
Other fibre packaging	2,000	0	0	0	0	0	0	0	0	0	1,000	0	0	9,000	51,000	0	62,000
Total (tonnes)	**170,000**	**0**	**0**	**55,000**	**3,156,000**	**0**	**0**	**0**	**0**	**6,000**	**38,000**	**93,000**	**0**	**60,000**	**114,000**	**0**	**3,693,000**
Total (%)	**4.6%**	**0.0%**	**0.0%**	**1.5%**	**85.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.2%**	**1.0%**	**2.5%**	**0.0%**	**1.6%**	**3.1%**	**0.0%**	**100.0%**

a) RPC – Returnable plastic crate.

Table F-3 – Paper & paperboard packaging POM in 2023–24, by material type and recycled content.

Material type	Post-consumer source		Pre-consumer source		Virgin source		Total
	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)	(tonnes)
Boxboard/Cartonboard	83,000	27%	69,000	22%	155,000	51%	**307,000**
Corrugated cardboard	1,853,000	66%	370,000	13%	566,000	20%	**2,789,000**
HWS carrierboard	0	0%	2,000	8%	24,000	92%	**27,000**
Kraft paper	23,000	7%	56,000	16%	261,000	77%	**340,000**
Moulded fibreboard	66,000	85%	4,000	6%	8,000	10%	**78,000**
PCPB – Aseptic	0	0%	0	0%	46,000	100%	**46,000**
PCPB – Gable top	0	0%	0	0%	12,000	100%	**12,000**
PCPB – Cold cup	0	0%	1,000	6%	8,000	94%	**8,000**
PCPB – Hot cup	0	0%	2,000	8%	19,000	92%	**21,000**
PCPB – Other	0	2%	0	2%	2,000	96%	**2,000**
Polymer coated paper	0	0%	0	0%	2,000	100%	**2,000**
Other fibre packaging	14,000	23%	6,000	9%	42,000	68%	**62,000**
Total	**2,039,000**	**55%**	**509,000**	**14%**	**1,145,000**	**31%**	**3,693,000**

Table F-4 – Paper & paperboard packaging POM in 2023–24, by material type and sector of use.

Material type	B2C – At home[a]	B2C – AfH[a]	B2B[a]	Other or unknown	Total[b]	
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%)
Boxboard/Cartonboard	247,000	6,000	54,000	0	307,000	8.3%
Corrugated cardboard	552,000	412,000	1,805,000	20,000	2,789,000	75.5%
HWS carrierboard	13,000	14,000	0	0	27,000	0.7%
Kraft paper	145,000	36,000	159,000	0	340,000	9.2%
Moulded fibreboard	43,000	3,000	31,000	0	78,000	2.1%
PCPB – Aseptic	27,000	5,000	11,000	2,000	46,000	1.2%
PCPB – Gable top	7,000	1,000	3,000	1,000	12,000	0.3%
PCPB – Cold cup	2,000	6,000	1,000	0	8,000	0.2%
PCPB – Hot cup	4,000	14,000	2,000	1,000	21,000	0.6%
PCPB – Other	0	1,000	0	0	2,000	0.1%
Polymer coated paper	1,000	2,000	0	0	2,000	0.1%
Other fibre packaging	1,000	6,000	39,000	17,000	62,000	1.7%
Total (tonnes)	**1,042,000**	**505,000**	**2,105,000**	**40,000**	**3,693,000**	**-**
Total (%)	**28.2%**	**13.7%**	**57.0%**	**1.1%**	**-**	**100.0%**

a) Business-to-consumer (B2C) – At home | Business-to-consumer (B2C) – Away-from-home (AfH) | Business-to-business (B2B).

F.1.2 Recovery

Table F-5 – Paper & paperboard packaging recovery from 2017–18 to 2023–24, by material type.

Material type	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23		2023-24	
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
Boxboard/Cartonboard	98,000	3.9	131,000	5.2	107,000	4.2	108,000	4.2	114,000	4.4	107,000	4.0	106,000	3.9
Corrugated cardboard	1,663,000	66.6	1,849,000	73.0	1,988,000	77.5	2,114,000	82.3	2,150,000	82.7	2,119,000	79.5	2,061,000	75.8
Polymer coated paperboard	14,000	0.6	5,000	0.2	5,000	0.2	2,000	0.1	3,000	0.1	5,000	0.2	6,000	0.2
Other fibre packaging[b]	42,000	1.7	60,000	2.4	128,000	5.0	145,000	5.6	236,000	9.1	240,000	9.0	264,000	9.7
Total	**1,817,000**	**72.8**	**2,045,000**	**80.7**	**2,229,000**	**86.9**	**2,370,000**	**92.3**	**2,502,000**	**96.2**	**2,469,000**	**92.6**	**2,437,000**	**89.6**

a) kg/p – kilograms per person.

b) 'Other fibre packaging' includes packaging types such as wraps, bags, pallet slips and void fill.

Table F-6 – Paper & paperboard packaging recovery in 2023–24, by material type and collection service.

Material type	MSW[a]	C&I[a]	CDS[a]	Other	Total	
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%)
Boxboard/Cartonboard	65,000	41,000	0	0	**106,000**	**4.3%**
Corrugated cardboard	1,021,000	1,015,000	0	24,000	**2,060,000**	**84.5%**
Polymer coated paperboard	2,000	1,000	3,000	1,000	**7,000**	**0.3%**
Other fibre packaging	155,000	109,000	0	0	**264,000**	**10.8%**
Total (tonnes)	**1,244,000**	**1,166,000**	**3,000**	**25,000**	**2,437,000**	**-**
Total (%)	**51.0%**	**47.8%**	**0.1%**	**1.0%**	**-**	**100.0%**

a) Municipal solid waste (MSW), commercial and industrial (C&I) waste, and container deposit scheme (CDS) collection services.

Table F-7 – Paper & paperboard packaging recovery in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	tonnes	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Boxboard/Cartonboard	0	0	0	0	106,000	0	0	0	0	0	0	0	0	0	0	0	**106,000**
Corrugated cardboard	0	0	0	0	2,061,000	0	0	0	0	0	0	0	0	0	0	0	**2,061,000**
HWS carrierboard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Kraft paper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Moulded fibreboard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
PCPB – Aseptic	0	0	0	0	1,000	0	0	0	0	0	0	0	0	0	0	0	**1,000**
PCPB – Gable top	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
PCPB – Cold cup	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
PCPB – Hot cup	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
PCPB – Other	0	0	0	0	3,000	0	0	0	0	0	1,000	0	0	0	0	0	**4,000**
Polymer coated paper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Other fibre packaging	56,000	0	0	0	5,000	0	0	0	0	0	0	43,000	0	57,000	102,000	0	**264,000**
Total (tonnes)	**56,000**	**0**	**0**	**0**	**2,177,000**	**0**	**0**	**0**	**0**	**0**	**1,000**	**43,000**	**0**	**57,000**	**103,000**	**0**	**2,437,000**
Total (%)	**2.3%**	**0.0%**	**0.0%**	**0.0%**	**89.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**1.8%**	**0.0%**	**2.3%**	**4.2%**	**0.0%**	**100.0%**

a) RPC – Returnable plastic crate.

Table F-8 – Paper & paperboard packaging recovery in 2023–24, by material type and destination of material.

Material type	Local	Overseas	Unknown destinations	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Boxboard/Cartonboard	28,000	78,000	0	**106,000**
Corrugated cardboard	1,093,000	968,000	0	**2,061,000**
HWS carrierboard	0	0	0	**0**
Kraft paper	0	0	0	**0**
Moulded fibreboard	0	0	0	**0**
PCPB – Aseptic	1,000	0	0	**1,000**
PCPB – Gable top	0	0	0	**0**
PCPB – Cold cup	0	0	0	**0**
PCPB – Hot cup	0	0	0	**0**
PCPB – Other	0	4,000	0	**4,000**
Polymer coated paper	0	0	0	**0**
Other fibre packaging	140,000	124,000	0	**264,000**
Total (tonnes)	**1,263,000**	**1,174,000**	**0**	**2,437,000**
Total (%)	**51.8%**	**48.2%**	**0.0%**	**100.0%**

Table F-9 – Paper & paperboard packaging post-consumer recovery rates in 2023–24, by material type.

Material type	POM	Recovery	Recovery rate
	(tonnes)	(tonnes)	(%)
Boxboard/Cartonboard	307,000	106,000	35%
Corrugated cardboard	2,789,000	2,061,000	74%
Polymer coated paper	91,000	6,000	7%
Other fibre packaging	506,000	264,000	52%
Total	**3,693,000**	**2,437,000**	**66%**

F.1.3 Projections to 2028–29

Table F-10 – Paper & paperboard packaging POM (mass and per capita bases) from 2021–22 to 2028–29, by material type.

Material type	2021–22		2022–23		2023–24		2024–25		2025–26		2026–27		2027–28		2028–29		5-yr CAGR[b]
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(%/yr)
Boxboard/Cartonboard	320,000	12.3	301,000	11.3	307,000	11.3	321,000	11.7	335,000	12.1	350,000	12.4	366,000	12.8	383,000	13.2	4.5%
Corrugated cardboard	2,772,000	106.6	2,897,000	108.7	2,789,000	102.6	2,884,000	105.3	2,983,000	107.3	3,085,000	109.4	3,190,000	111.6	3,299,000	114.0	3.4%
HWS carrierboard	25,000	1.0	23,000	0.9	27,000	1.0	27,000	1.0	28,000	1.0	29,000	1.0	30,000	1.1	31,000	1.1	3.1%
Kraft paper	290,000	11.2	330,000	12.4	340,000	12.5	354,000	12.9	368,000	13.3	384,000	13.6	399,000	14.0	416,000	14.4	4.1%
Moulded fibreboard	65,000	2.5	73,000	2.8	78,000	2.9	81,000	3.0	86,000	3.1	90,000	3.2	95,000	3.3	99,000	3.4	5.1%
PCPB – Aseptic	51,000	2.0	43,000	1.6	46,000	1.7	47,000	1.7	49,000	1.8	51,000	1.8	53,000	1.8	54,000	1.9	3.5%
PCPB – Gable top	16,000	0.6	13,000	0.5	12,000	0.4	12,000	0.4	12,000	0.4	13,000	0.5	13,000	0.5	13,000	0.5	2.2%
PCPB – Cold cup	8,000	0.3	9,000	0.3	8,000	0.3	8,000	0.3	9,000	0.3	9,000	0.3	9,000	0.3	9,000	0.3	1.1%
PCPB – Hot cup	20,000	0.7	22,000	0.8	21,000	0.8	21,000	0.8	22,000	0.8	23,000	0.8	24,000	0.8	24,000	0.8	3.4%
PCPB – Other	6,000	0.2	3,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	2.6%
Polymer coated paper	1,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	3,000	0.1	3,000	0.1	4.0%
Other fibre packaging	80,000	3.1	89,000	3.3	62,000	2.3	64,000	2.4	67,000	2.4	70,000	2.5	72,000	2.5	75,000	2.6	3.9%
Total	**3,654,000**	**140.5**	**3,805,000**	**142.8**	**3,693,000**	**135.8**	**3,826,000**	**139.7**	**3,964,000**	**142.6**	**4,107,000**	**145.6**	**4,255,000**	**148.9**	**4,409,000**	**152.3**	**3.6%**

a) kg/p – kilograms per person.

b) CAGR – compound annual growth rate.

c) Examples of other fibre packaging POM include paper bags and food wraps.

Table F-11 – Paper & paperboard packaging reprocessing capacity projections from 2023–24 to 2028–29, by material type.

Material type	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	5 year CAGR[a]
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%/yr)
Boxboard/Cartonboard	134,000	134,000	134,000	206,000	206,000	206,000	9.0%
Corrugated cardboard	1,348,000	1,348,000	1,348,000	1,530,000	1,530,000	1,530,000	2.6%
HWS carrierboard	No data	No data	No data	No data	No data	No data	N/A
Kraft paper	No data	No data	No data	No data	No data	No data	N/A
Moulded fibreboard	No data	No data	No data	No data	No data	No data	N/A
PCPB – Aseptic	3,000	3,000	3,000	6,000	6,000	6,000	15.3%
PCPB – Gable top	1,000	1,000	1,000	2,000	2,000	2,000	15.3%
PCPB – Cold cup	<500	<500	<500	<500	<500	<500	15.3%
PCPB – Hot cup	<500	<500	<500	<500	<500	<500	15.3%
Polymer coated paperboard	1,000	1,000	1,000	1,000	1,000	1,000	3.1%
Polymer coated paper	0	0	0	0	0	0	N/A
Other fibre packaging	163,000	163,000	163,000	169,000	169,000	169,000	0.7%
Total	**1,649,000**	**1,649,000**	**1,649,000**	**1,913,000**	**1,913,000**	**1,913,000**	**3.0%**

a) CAGR – compound annual growth rate.

F.2 Glass packaging in 2023–24

F.2.1 Placed on market

Table F-12 – Glass packaging POM (mass and per capita bases) from 2017–18 to 2023–24, by material type.

Material type	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23		2023-24	
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
Amber glass	438,000	17.5	381,000	15.0	334,000	13.0	233,000	9.1	181,000	7.0	258,000	9.7	253,000	9.3
Flint glass	471,000	18.9	643,000	25.4	606,000	23.6	605,000	23.6	494,000	19.0	448,000	16.8	449,000	16.5
Green glass[b]	364,000	14.6	258,000	10.2	216,000	8.4	445,000	17.3	468,000	18.0	399,000	15.0	361,000	13.3
Total	**1,273,000**	**51.0**	**1,283,000**	**50.6**	**1,156,000**	**45.1**	**1,283,000**	**50.0**	**1,143,000**	**44.0**	**1,105,000**	**41.5**	**1,063,000**	**39.1**

a) kg/p – kilograms per person.

b) Includes very small quantities of other glass colours (e.g. blue glass).

Table F-13 – Glass packaging POM in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Amber glass	0	0	253,000	0	0	0	0	0	0	0	0	0	0	0	0	0	253,000
Flint glass	0	0	449,000	0	0	0	0	0	0	0	0	0	0	0	0	0	449,000
Green glass	0	0	361,000	0	0	0	0	0	0	0	0	0	0	0	0	0	361,000
Total (tonnes)	**0**	**0**	**1,063,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,063,000**
Total (%)	**0.0%**	**0.0%**	**100.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**

a) RPC – Returnable plastic crate.

Table F-14 – Glass packaging POM in 2023–24, by material type and recycled content.

Material type	Post-consumer source		Pre-consumer source		Virgin source		Total
	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)	(tonnes)
Amber glass	163,000	64%	10,000	4%	80,000	32%	**253,000**
Flint glass	201,000	45%	17,000	4%	232,000	52%	**449,000**
Green glass	214,000	59%	17,000	5%	130,000	36%	**361,000**
Total	**577,000**	**54%**	**44,000**	**4%**	**442,000**	**42%**	**1,063,000**

Table F-15 – Glass packaging POM in 2023–24, by material type and sector of use.

Material type	B2C – At home[a]	B2C – AfH[a]	B2B[a]	Other or unknown	Total	
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%)
Amber glass	165,000	88,000	0	0	**253,000**	**23.8%**
Flint glass	350,000	93,000	6,000	0	**449,000**	**42.2%**
Green glass	239,000	122,000	0	0	**361,000**	**33.9%**
Total (tonnes)	**754,000**	**302,000**	**6,000**	**0**	**1,063,000**	**-**
Total (%)	**70.9%**	**28.4%**	**0.6%**	**0.0%**	**-**	**100.0%**

a) Business-to-consumer (B2C) – At home | Business-to-consumer (B2C) – Away-from-home (AfH) | Business-to-business (B2B).

F.2.2 Recovery

Table F-16 – Glass packaging recovery from 2017–18 to 2023–24, by material type.

Material type	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23		2023–24	
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
Amber glass	189,000	5.8	174,000	6.9	202,000	7.9	202,000	7.9	174,000	6.7	245,000	9.2	235,000	8.6
Flint glass	212,000	6.5	283,000	11.2	366,000	14.3	374,000	14.6	315,000	12.1	268,000	10.1	362,000	13.3
Green glass	180,000	5.5	117,000	4.6	131,000	5.1	228,000	8.9	230,000	8.8	247,000	9.3	254,000	9.3
Total	**582,000**	**23.3**	**574,000**	**22.6**	**699,000**	**27.3**	**805,000**	**31.3**	**718,000**	**27.6**	**761,000**	**28.6**	**851,000**	**31.3**

a) kg/p – kilograms per person.

Table F-17 – Glass packaging recovery in 2023–24, by material type and collection service.

Material type	MSW[a]	C&I[a]	CDS[a]	Other	Total	
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%)
Amber glass	123,000	0	112,000	0	**235,000**	**27.6%**
Flint glass	293,000	0	70,000	0	**363,000**	**42.7%**
Green glass	170,000	0	84,000	0	**254,000**	**29.8%**
Total (tonnes)	**586,000**	**0**	**265,000**	**0**	**851,000**	**-**
Total (%)	**68.8%**	**0.0%**	**31.2%**	**0.0%**	**-**	**100.0%**

a) Municipal solid waste (MSW), commercial and industrial (C&I) waste, and container deposit scheme (CDS) collection services.

Table F-18 – Glass packaging recovery in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Amber glass	0	0	235,000	0	0	0	0	0	0	0	0	0	0	0	0	0	**235,000**
Flint glass	0	0	362,000	0	0	0	0	0	0	0	0	0	0	0	0	0	**362,000**
Green glass	0	0	254,000	0	0	0	0	0	0	0	0	0	0	0	0	0	**254,000**
Total (tonnes)	**0**	**0**	**851,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**851,000**
Total (%)	**0.0%**	**0.0%**	**100.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**

a) RPC – Returnable plastic crate.

Table F-19 – Glass packaging recovery in 2023–24, by material type and destination of material.

Material type	Local	Overseas	Unknown destinations	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Amber glass	235,000	0	0	**235,000**
Flint glass	362,000	0	0	**362,000**
Green glass	254,000	0	0	**254,000**
Total (tonnes)	**851,000**	**0**	**0**	**851,000**
Total (%)	**100.0%**	**0.0%**	**0.0%**	**100.0%**

Table F-20 – Glass packaging post-consumer recovery rates in 2023–24, by material type.

Material type	POM	Recovery	Recovery rate
	(tonnes)	(tonnes)	(%)
Amber glass	253,000	235,000	93%
Flint glass	449,000	362,000	81%
Green glass	361,000	254,000	70%
Total	**1,063,000**	**851,000**	**80%**

F.2.3 Projections to 2028–29

Table F-21 – Glass packaging POM (mass and per capita bases) from 2021–22 to 2028–29, by material type.

Material type	2021–22		2022–23		2023–24		2024–25		2025–26		2026–27		2027–28		2028–29		5-yr CAGR[b]
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(%/yr)
Amber glass	181,000	7.0	258,000	9.7	253,000	9.3	267,000	9.7	281,000	10.1	296,000	10.5	311,000	10.9	328,000	11.3	5.3%
Flint glass	494,000	19.0	448,000	16.8	449,000	16.5	473,000	17.3	498,000	17.9	525,000	18.6	553,000	19.3	582,000	20.1	5.3%
Green glass	468,000	18.0	399,000	15.0	361,000	13.3	377,000	13.8	394,000	14.2	411,000	14.6	429,000	15.0	448,000	15.5	4.4%
Total	**1,143,000**	**44.0**	**1,105,000**	**41.5**	**1,063,000**	**39.1**	**1,117,000**	**40.8**	**1,173,000**	**42.2**	**1,232,000**	**43.7**	**1,293,000**	**45.3**	**1,358,000**	**46.9**	**5.0%**

a) kg/p – kilograms per person.
b) CAGR – compound annual growth rate.

Table F-22 – Glass packaging reprocessing capacity projections from 2023–24 to 2028–29, by material type.

Material type	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	5 year CAGR[a]
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%/yr)
Amber glass	390,000	395,000	407,000	455,000	458,000	474,000	4.0%
Flint glass	452,000	463,000	484,000	569,000	572,000	600,000	5.8%
Green glass	404,000	413,000	430,000	498,000	501,000	524,000	5.3%
Total	**1,246,000**	**1,271,000**	**1,321,000**	**1,521,000**	**1,531,000**	**1,598,000**	**5.1%**

a) CAGR – compound annual growth rate.

F.3 Plastic packaging in 2023–24

F.3.1 Placed on market

Table F-23 – Plastic packaging POM (mass and per capita bases) from 2017–18 to 2023–24, by material type.

Material type[a]	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23		2023–24	
	(tonnes)	(kg/p)[b]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
PET (1)	132,000	5.3	154,000	6.1	163,000	6.4	135,000	5.3	179,000	6.9	203,000	7.6	218,000	8.0
HDPE (2)	351,000	14.1	316,000	12.5	275,000	10.7	214,000	8.4	332,000	12.8	292,000	11.0	299,000	11.0
PVC (3)	20,000	0.8	15,000	0.6	17,000	0.7	4,000	0.2	11,000	0.4	10,000	0.4	9,000	0.3
LDPE (4)	254,000	10.2	233,000	9.2	276,000	10.7	10,000	0.4	328,000	12.6	308,000	11.5	272,000	10.0
PP (5)	164,000	6.6	155,000	6.1	218,000	8.5	166,000	6.5	253,000	9.7	265,000	9.9	269,000	9.9
PS (6)	11,000	0.5	11,000	0.4	17,000	0.7	17,000	0.7	17,000	0.6	14,000	0.5	12,000	0.4
EPS (6)	22,000	0.9	16,000	0.6	23,000	0.9	29,000	1.1	30,000	1.1	28,000	1.0	26,000	1.0
Bioplastic (7)	1,000	0.0	6,000	0.3	9,000	0.3	2,000	0.1	2,000	0.1	5,000	0.2	9,000	0.3
Other (7)	111,000	4.4	16,000	0.6	20,000	0.8	2,000	0.1	17,000	0.7	17,000	0.6	15,000	0.6
Unidentified	NR[c]	NR[c]	78,000	3.1	107,000	4.2	60,000	2.4	109,000	4.2	124,000	4.7	141,000	5.2
Total	**1,067,000**	**42.7**	**1,000,000**	**39.5**	**1,124,000**	**43.8**	**641,000**	**25.0**	**1,277,000**	**49.1**	**1,265,000**	**47.5**	**1,269,000**	**46.7**

a) PET (1) – Polyethylene terephthalate (PIC 1) | HDPE (2) – High-density polyethylene (PIC 2) | PVC (3) – Polyvinyl chloride (PIC 3) | LDPE (4) – Low-density polyethylene (PIC 4) | PP (5) – Polypropylene (PIC 5) | PS (6) – Polystyrene (PIC 6) | EPS (6) – Expanded polystyrene (PIC 6). PIC – Plastic identification code.

b) kg/p – kilograms per person.

c) NR – not reported.

Table F-24 – Rigid plastic packaging POM (mass and per capita bases) from 2017–18 to 2023–24, by material type.

Material type[a]	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23		2023–24	
	(tonnes)	(kg/p)[b]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
PET (1)	124,000	5.0	133,000	5.2	131,000	5.1	135,000	5.3	170,000	6.5	191,000	7.2	208,000	7.7
HDPE (2)	274,000	11.0	286,000	11.3	213,000	8.3	214,000	8.4	246,000	9.5	220,000	8.3	217,000	8.0
PVC (3)	13,000	0.5	7,000	0.3	5,000	0.2	4,000	0.2	3,000	0.1	2,000	0.1	2,000	0.1
LDPE (4)	49,000	1.9	10,000	0.4	11,000	0.4	10,000	0.4	10,000	0.4	11,000	0.4	16,000	0.6
PP (5)	121,000	4.9	116,000	4.6	134,000	5.2	166,000	6.5	176,000	6.8	180,000	6.8	181,000	6.6
PS (6)	10,000	0.4	11,000	0.4	17,000	0.7	17,000	0.7	16,000	0.6	14,000	0.5	11,000	0.4
EPS (6)	20,000	0.8	16,000	0.6	23,000	0.9	29,000	1.1	30,000	1.1	28,000	1.0	26,000	1.0
Bioplastic (7)	1,000	0.0	5,000	0.2	7,000	0.3	2,000	0.1	2,000	0.1	4,000	0.1	8,000	0.3
Other (7)	83,000	3.3	3,000	0.1	2,000	0.1	2,000	0.1	1,000	0.0	5,000	0.2	0	0.0
Unidentified	NR[c]	NR[c]	50,000	2.0	59,000	2.3	60,000	2.4	51,000	2.0	68,000	2.6	78,000	2.9
Total	**695,000**	**27.8**	**638,000**	**25.2**	**600,000**	**23.4**	**641,000**	**25.0**	**705,000**	**27.1**	**724,000**	**27.2**	**748,000**	**27.5**

a) PET (1) – Polyethylene terephthalate (PIC 1) | HDPE (2) – High-density polyethylene (PIC 2) | PVC (3) – Polyvinyl chloride (PIC 3) | LDPE (4) – Low-density polyethylene (PIC 4) | PP (5) – Polypropylene (PIC 5) | PS (6) – Polystyrene (PIC 6) | EPS (6) – Expanded polystyrene (PIC 6). PIC – Plastic identification code.

b) kg/p – kilograms per person.

c) NR – not reported.

Table F-25 – Flexible plastic packaging POM (mass and per capita bases) from 2017–18 to 2023–24, by material type.

Material type[a]	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23		2023–24	
	(tonnes)	(kg/p)[b]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
PET (1)	8,000	0.3	22,000	0.8	33,000	1.3	14,000	0.5	9,000	0.3	13,000	0.5	9,000	0.3
HDPE (2)	78,000	3.1	30,000	1.2	62,000	2.4	72,000	2.8	86,000	3.3	72,000	2.7	82,000	3.0
PVC (3)	7,000	0.3	8,000	0.3	12,000	0.5	10,000	0.4	8,000	0.3	7,000	0.3	6,000	0.2
LDPE (4)	206,000	8.2	222,000	8.8	265,000	10.3	321,000	12.5	318,000	12.2	296,000	11.1	256,000	9.4
PP (5)	43,000	1.7	39,000	1.5	84,000	3.3	49,000	1.9	77,000	2.9	84,000	3.2	88,000	3.2
PS (6)	1,000	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
EPS (6)	2,000	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Bioplastic (7)	0	0.0	1,000	0.0	2,000	0.1	1,000	0.1	0	0.0	1,000	0.0	2,000	0.1
Other (7)	28,000	1.1	12,000	0.5	18,000	0.7	19,000	0.7	17,000	0.6	12,000	0.4	15,000	0.6
Unidentified	NR[c]	NR[c]	28,000	1.1	48,000	1.9	51,000	2.0	58,000	2.2	56,000	2.1	63,000	2.3
Total	**372,000**	**14.9**	**362,000**	**14.3**	**524,000**	**20.4**	**538,000**	**21.0**	**572,000**	**22.0**	**541,000**	**20.3**	**521,000**	**19.2**

a) PET (1) – Polyethylene terephthalate (PIC 1) | HDPE (2) – High-density polyethylene (PIC 2) | PVC (3) – Polyvinyl chloride (PIC 3) | LDPE (4) – Low-density polyethylene (PIC 4) | PP (5) – Polypropylene (PIC 5) | PS (6) – Polystyrene (PIC 6) | EPS (6) – Expanded polystyrene (PIC 6). PIC – Plastic identification code.

b) kg/p – kilograms per person.

c) NR – not reported.

Table F-26 – Plastic packaging POM in 2023–24, by material type and rigid/flexible classification.

Material type	Rigid	Flexible	Total
	(tonnes)	(tonnes)	(tonnes)
PET (1) – Natural	180,000	4,000	184,000
PET (1) – Transparent	21,000	0	21,000
PET (1) – Opaque	7,000	6,000	12,000
HDPE (2) – Natural	150,000	20,000	170,000
HDPE (2) – Coloured	67,000	62,000	129,000
PVC (3)	2,000	6,000	9,000
LDPE (4)	16,000	256,000	272,000
PP (5) – Natural	55,000	45,000	100,000
PP (5) – Coloured	126,000	43,000	169,000
PS (6)	11,000	0	12,000
EPS (6)	26,000	0	26,000
Bioplastic (7)	8,000	2,000	9,000
Other (7)	0	15,000	15,000
Unidentified	78,000	63,000	141,000
Total (tonnes)	**748,000**	**521,000**	**1,269,000**
Total (%)	**58.9%**	**41.1%**	**100.0%**

Table F-27 – Plastic packaging POM in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
PET (1) – Natural	1,000	0	124,000	0	0	0	0	0	0	0	4,000	49,000	0	1,000	0	4,000	184,000
PET (1) – Transparent	0	0	19,000	0	0	0	0	0	0	0	0	2,000	0	0	0	0	21,000
PET (1) – Opaque	0	0	5,000	0	0	0	0	0	0	0	2,000	0	0	5,000	0	0	12,000
HDPE (2) – Natural	5,000	5,000	126,000	0	0	4,000	0	1,000	0	3,000	0	0	0	3,000	1,000	21,000	170,000
HDPE (2) – Coloured	53,000	1,000	49,000	0	0	2,000	0	1,000	0	9,000	0	0	12,000	0	2,000	0	129,000
PVC (3)	1,000	0	1,000	0	0	1,000	0	0	0	0	0	0	0	5,000	0	0	9,000
LDPE (4)	137,000	0	3,000	0	0	5,000	0	0	0	10,000	0	1,000	0	104,000	1,000	11,000	272,000
PP (5) – Natural	5,000	1,000	2,000	0	0	7,000	13,000	0	0	0	1,000	38,000	0	23,000	1,000	10,000	100,000
PP (5) – Coloured	22,000	8,000	0	0	0	5,000	2,000	1,000	6,000	3,000	1,000	88,000	0	5,000	1,000	28,000	169,000
PS (6)	0	0	0	0	0	1,000	0	0	0	0	7,000	3,000	0	0	0	1,000	12,000
EPS (6)	0	0	0	0	10,000	0	0	0	0	0	0	0	0	0	16,000	0	26,000
Bioplastic (7)	1,000	0	0	0	0	0	0	0	0	0	2,000	6,000	0	0	0	0	9,000
Other (7)	0	0	0	0	0	0	0	0	0	0	0	0	0	15,000	0	0	15,000
Unidentified	43,000	0	15,000	0	0	31,000	0	0	0	0	0	0	0	0	2,000	48,000	141,000
Total (tonnes)	**270,000**	**14,000**	**345,000**	**0**	**10,000**	**56,000**	**15,000**	**3,000**	**6,000**	**26,000**	**16,000**	**187,000**	**12,000**	**162,000**	**25,000**	**122,000**	**1,269,000**
Total (%)	**21.3%**	**1.1%**	**27.2%**	**0.0%**	**0.8%**	**4.4%**	**1.2%**	**0.2%**	**0.4%**	**2.0%**	**1.3%**	**14.7%**	**0.9%**	**12.8%**	**2.0%**	**9.6%**	**100.0%**

a) RPC – Returnable plastic crate.

Table F-28 – Rigid plastic packaging POM in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
PET (1) – Natural	0	0	124,000	0	0	0	0	0	0	0	4,000	49,000	0	0	0	2,000	180,000
PET (1) – Transparent	0	0	19,000	0	0	0	0	0	0	0	0	2,000	0	0	0	0	21,000
PET (1) – Opaque	0	0	5,000	0	0	0	0	0	0	0	2,000	0	0	0	0	0	7,000
HDPE (2) – Natural	0	5,000	126,000	0	0	4,000	0	1,000	0	0	0	0	0	0	1,000	12,000	150,000
HDPE (2) – Coloured	0	1,000	49,000	0	0	2,000	0	1,000	0	0	0	0	12,000	0	2,000	0	67,000
PVC (3)	0	0	1,000	0	0	1,000	0	0	0	0	0	0	0	0	0	0	2,000
LDPE (4)	0	0	3,000	0	0	5,000	0	0	0	0	0	1,000	0	0	1,000	7,000	16,000
PP (5) – Natural	0	1,000	2,000	0	0	7,000	0	0	0	0	1,000	38,000	0	0	1,000	6,000	55,000
PP (5) – Coloured	0	8,000	0	0	0	5,000	0	1,000	6,000	0	1,000	88,000	0	0	1,000	17,000	126,000
PS (6)	0	0	0	0	0	1,000	0	0	0	0	7,000	3,000	0	0	0	0	11,000
EPS (6)	0	0	0	0	10,000	0	0	0	0	0	0	0	0	0	16,000	0	26,000
Bioplastic (7)	0	0	0	0	0	0	0	0	0	0	2,000	6,000	0	0	0	0	8,000
Other (7)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified	0	0	15,000	0	0	31,000	0	0	0	0	0	0	0	0	2,000	29,000	78,000
Total (tonnes)	**0**	**14,000**	**345,000**	**0**	**10,000**	**56,000**	**0**	**3,000**	**6,000**	**0**	**16,000**	**187,000**	**12,000**	**0**	**25,000**	**73,000**	**748,000**
Total (%)	**0.0%**	**1.9%**	**46.1%**	**0.0%**	**1.3%**	**7.5%**	**0.0%**	**0.4%**	**0.7%**	**0.0%**	**2.2%**	**25.0%**	**1.6%**	**0.0%**	**3.4%**	**9.8%**	**100.0%**

a) RPC – Returnable plastic crate.

Table F-29 – Flexible plastic packaging POM in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
PET (1) – Natural	1,000	0	0	0	0	0	0	0	0	0	0	0	0	1,000	0	2,000	4,000
PET (1) – Transparent	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PET (1) – Opaque	0	0	0	0	0	0	0	0	0	0	0	0	0	5,000	0	0	6,000
HDPE (2) – Natural	5,000	0	0	0	0	0	0	0	0	3,000	0	0	0	3,000	0	8,000	20,000
HDPE (2) – Coloured	53,000	0	0	0	0	0	0	0	0	9,000	0	0	0	0	0	0	62,000
PVC (3)	1,000	0	0	0	0	0	0	0	0	0	0	0	0	5,000	0	0	6,000
LDPE (4)	137,000	0	0	0	0	0	0	0	0	10,000	0	0	0	104,000	0	4,000	256,000
PP (5) – Natural	5,000	0	0	0	0	0	13,000	0	0	0	0	0	0	23,000	0	4,000	45,000
PP (5) – Coloured	22,000	0	0	0	0	0	2,000	0	0	3,000	0	0	0	5,000	0	11,000	43,000
PS (6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EPS (6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bioplastic (7)	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,000
Other (7)	0	0	0	0	0	0	0	0	0	0	0	0	0	15,000	0	0	15,000
Unidentified	43,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19,000	63,000
Total (tonnes)	**270,000**	**0**	**0**	**0**	**0**	**0**	**15,000**	**0**	**0**	**26,000**	**0**	**0**	**0**	**162,000**	**0**	**49,000**	**521,000**
Total (%)	**51.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.8%**	**0.0%**	**0.0%**	**4.9%**	**0.0%**	**0.0%**	**0.0%**	**31.1%**	**0.0%**	**9.4%**	**100.0%**

a) RPC – Returnable plastic crate.

Table F-30 – Plastic packaging POM in 2023–24, by material type and recycled content.

Material type	Post-consumer source		Pre-consumer source		Virgin source		Total
	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)	(tonnes)
PET (1) – Natural	62,000	34%	11,000	6%	110,000	60%	184,000
PET (1) – Transparent	1,000	5%	0	1%	20,000	95%	21,000
PET (1) – Opaque	0	1%	0	0%	12,000	99%	12,000
HDPE (2) – Natural	16,000	9%	5,000	3%	149,000	88%	170,000
HDPE (2) – Coloured	7,000	5%	7,000	5%	115,000	89%	129,000
PVC (3)	0	0%	0	3%	8,000	97%	9,000
LDPE (4)	3,000	1%	0	0%	269,000	99%	272,000
PP (5) – Natural	1,000	1%	2,000	2%	97,000	97%	100,000
PP (5) – Coloured	34,000	20%	1,000	0%	134,000	80%	169,000
PS (6)	0	2%	0	0%	11,000	98%	12,000
EPS (6)	0	0%	0	0%	26,000	100%	26,000
Bioplastic (7)	0	0%	0	2%	9,000	98%	9,000
Other (7)	0	0%	1,000	3%	15,000	97%	15,000
Unidentified	0	0%	0	0%	141,000	100%	141,000
Total	**124,000**	**10%**	**28,000**	**2%**	**1,117,000**	**88%**	**1,269,000**

Table F-31 – Rigid plastic packaging POM in 2023–24, by material type and recycled content.

Material type	Post-consumer source		Pre-consumer source		Virgin source		Total
	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)	(tonnes)
PET (1) – Natural	61,000	34%	11,000	6%	107,000	60%	180,000
PET (1) – Transparent	1,000	5%	0	1%	20,000	95%	21,000
PET (1) – Opaque	0	1%	0	0%	7,000	99%	7,000
HDPE (2) – Natural	15,000	10%	5,000	3%	130,000	87%	150,000
HDPE (2) – Coloured	6,000	10%	7,000	10%	54,000	80%	67,000
PVC (3)	0	0%	0	3%	2,000	97%	2,000
LDPE (4)	1,000	5%	0	1%	15,000	94%	16,000
PP (5) – Natural	1,000	1%	2,000	4%	52,000	95%	55,000
PP (5) – Coloured	34,000	27%	1,000	1%	91,000	72%	126,000
PS (6)	0	2%	0	0%	11,000	98%	11,000
EPS (6)	0	0%	0	0%	26,000	100%	26,000
Bioplastic (7)	0	0%	0	3%	8,000	97%	8,000
Other (7)	0	0%	0	2%	0	98%	0
Unidentified	0	0%	0	0%	78,000	100%	78,000
Total	**119,000**	**16%**	**27,000**	**4%**	**602,000**	**80%**	**748,000**

Table F-32 – Flexible plastic packaging POM in 2023–24, by material type and recycled content.

Material type	Post-consumer source		Pre-consumer source		Virgin source		Total
	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)	(tonnes)
PET (1) – Natural	1,000	25%	0	3%	3,000	72%	4,000
PET (1) – Transparent	0	0%	0	0%	0	100%	0
PET (1) – Opaque	0	1%	0	0%	6,000	99%	6,000
HDPE (2) – Natural	1,000	7%	0	0%	19,000	93%	20,000
HDPE (2) – Coloured	0	1%	0	0%	62,000	99%	62,000
PVC (3)	0	0%	0	3%	6,000	97%	6,000
LDPE (4)	2,000	1%	0	0%	254,000	99%	256,000
PP (5) – Natural	0	0%	0	0%	45,000	100%	45,000
PP (5) – Coloured	0	0%	0	0%	43,000	100%	43,000
PS (6)	0	3%	0	0%	0	97%	0
EPS (6)	0	0%	0	0%	0	0%	0
Bioplastic (7)	0	0%	0	0%	2,000	100%	2,000
Other (7)	0	0%	1,000	3%	14,000	97%	15,000
Unidentified	0	0%	0	0%	63,000	100%	63,000
Total	**5,000**	**1%**	**1,000**	**0%**	**515,000**	**99%**	**521,000**

Table F-33 – Plastic packaging POM in 2023–24, by material type and sector of use.

Material type	B2C – At home[a]	B2C – AfH[a]	B2B[a]	Other or unknown	Total	
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%)
PET (1)	192,000	15,000	11,000	0	218,000	17.2%
HDPE (2)	214,000	3,000	82,000	0	299,000	23.6%
PVC (3)	4,000	0	4,000	0	9,000	0.7%
LDPE (4)	178,000	1,000	94,000	0	272,000	21.4%
PP (5)	181,000	5,000	82,000	0	269,000	21.2%
PS (6)	11,000	0	0	0	12,000	0.9%
EPS (6)	8,000	0	18,000	0	26,000	2.0%
Bioplastic (7)	8,000	1,000	0	0	9,000	0.7%
Other (7)	10,000	5,000	0	0	15,000	1.2%
Unidentified	121,000	1,000	18,000	0	141,000	11.1%
Total (tonnes)	**927,000**	**31,000**	**311,000**	**0**	**1,269,000**	**-**
Total (%)	**73.1%**	**2.4%**	**24.5%**	**0.0%**	**-**	**100.0%**

a) Business-to-consumer (B2C) – At home | Business-to-consumer (B2C) – Away-from-home (AfH) | Business-to-business (B2B).

Table F-34 – Plastic packaging POM suitable for food contact applications, by material type.

Material type	Into food contact applications or suitable for food contact applications		Not suitable for food contact applications		Unknown suitability for food contact applications		Total
	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)	(tonnes)
PET (1) – Natural	145,000	79%	1,000	1%	37,000	20%	184,000
PET (1) – Transparent	17,000	82%	0	0%	4,000	18%	21,000
PET (1) – Opaque	8,000	63%	0	0%	5,000	37%	12,000
HDPE (2) – Natural	138,000	81%	20,000	12%	12,000	7%	170,000
HDPE (2) – Coloured	102,000	79%	27,000	21%	0	0%	129,000
PVC (3)	7,000	87%	1,000	9%	0	4%	9,000
LDPE (4)	244,000	90%	24,000	9%	4,000	1%	272,000
PP (5) – Natural	92,000	93%	2,000	2%	6,000	6%	100,000
PP (5) – Coloured	118,000	70%	47,000	28%	4,000	2%	169,000
PS (6)	11,000	99%	0	0%	0	1%	12,000
EPS (6)	26,000	100%	0	0%	0	0%	26,000
Bioplastic (7)	9,000	96%	0	4%	0	0%	9,000
Other (7)	15,000	99%	0	0%	0	0%	15,000
Unidentified	136,000	97%	2,000	2%	2,000	1%	141,000
Total	**1,070,000**	**84%**	**125,000**	**10%**	**74,000**	**6%**	**1,269,000**

F.3.2 Recovery

Table F-35 – Plastic packaging recovery from 2017–18 to 2023–24, by material type.

Material type[a]	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23		2023–24	
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
PET (1)	57,000	2.3	55,000	2.2	55,000	2.2	58,000	2.2	90,000	3.5	81,000	3.1	107,000	3.9
HDPE (2)	66,000	2.7	73,000	2.9	60,000	2.3	66,000	2.6	71,000	2.7	79,000	2.9	70,000	2.6
PVC (3)	1,000	0.1	1,000	0.0	2,000	0.1	0	0.0	0	0.0	0	0.0	0	0.0
LDPE (4)	28,000	1.1	22,000	0.8	15,000	0.6	32,000	2.6	60,000	2.3	32,000	1.2	39,000	1.4
PP (5)	12,000	0.5	21,000	0.8	20,000	0.8	30,000	0.0	19,000	0.7	34,000	1.3	28,000	1.0
PS (6)	2,000	0.1	3,000	0.1	4,000	0.2	2,000	0.0	1,000	0.0	1,000	0.0	1,000	0.0
EPS (6)	4,000	0.2	4,000	0.2	4,000	0.2	9,000	1.2	5,000	0.2	7,000	0.3	7,000	0.3
Bioplastic (7)	0	0.0	0	0.0	0	0.0	0	1.2	0	0.0	0	0.0	0	0.0
Other (7)	1,000	0.1	0	0.0	1,000	0.0	0	0.0	4,000	0.2	0	0.0	0	0.0
Unidentified	NR[c]	NR[c]	3,000	0.1	17,000	0.7	10,000	0.1	7,000	0.3	0	0.0	2,000	0.1
Total	**173,000**	**6.9**	**182,000**	**7.2**	**179,000**	**7.0**	**207,000**	**8.0**	**258,000**	**9.9**	**234,000**	**8.8**	**255,000**	**9.4**

a) PET (1) – Polyethylene terephthalate (PIC 1) | HDPE (2) – High-density polyethylene (PIC 2) | PVC (3) – Polyvinyl chloride (PIC 3) | LDPE (4) – Low-density polyethylene (PIC 4) | PP (5) – Polypropylene (PIC 5) | PS (6) – Polystyrene (PIC 6) | EPS (6) – Expanded polystyrene (PIC 6). PIC – Plastic identification code.

b) kg/p – kilograms per person.

c) NR – not reported.

Table F-36 – Rigid plastic packaging recovery from 2017–18 to 2023–24, by material type.

Material type[a]	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23		2023–24	
	(tonnes)	(kg/p)[b]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
PET (1)	57,000	2.3	55,000	2.2	55,000	2.2	58,000	2.2	90,000	3.4	81,000	3.1	107,000	3.9
HDPE (2)	66,000	2.7	72,000	2.8	57,000	2.2	65,000	2.5	71,000	2.7	77,000	2.9	70,000	2.6
PVC (3)	1,000	0.1	1,000	0.0	2,000	0.1	0	0.0	0	0.0	0	0.0	0	0.0
LDPE (4)	0	0.0	4,000	0.1	3,000	0.1	3,000	2.5	1,000	0.0	0	0.0	0	0.0
PP (5)	12,000	0.5	20,000	0.8	17,000	0.7	29,000	0.0	17,000	0.6	33,000	1.2	25,000	0.9
PS (6)	2,000	0.1	3,000	0.1	4,000	0.2	2,000	0.0	1,000	0.0	1,000	0.0	1,000	0.0
EPS (6)	4,000	0.2	4,000	0.2	4,000	0.2	9,000	0.1	5,000	0.2	7,000	0.3	7,000	0.3
Bioplastic (7)	0	0.0	0	0.0	0	0.0	0	1.1	0	0.0	0	0.0	0	0.0
Other (7)	1,000	0.1	0	0.0	1,000	0.0	0	0.0	4,000	0.2	0	0.0	0	0.0
Unidentified	NR[c]	NR[c]	3,000	0.1	14,000	0.5	1,000	0.1	7,000	0.3	0	0.0	1,000	0.0
Total	**144,000**	**5.8**	**163,000**	**6.4**	**159,000**	**6.2**	**167,000**	**6.5**	**196,000**	**7.5**	**200,000**	**7.5**	**211,000**	**7.7**

a) PET (1) – Polyethylene terephthalate (PIC 1) | HDPE (2) – High-density polyethylene (PIC 2) | PVC (3) – Polyvinyl chloride (PIC 3) | LDPE (4) – Low-density polyethylene (PIC 4) | PP (5) – Polypropylene (PIC 5) | PS (6) – Polystyrene (PIC 6) | EPS (6) – Expanded polystyrene (PIC 6). PIC – Plastic identification code.

b) kg/p – kilograms per person.

c) NR – not reported.

Table F-37 – Flexible plastic packaging recovery from 2017–18 to 2023–24, by material type.

Material type[a]	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23		2023–24	
	(tonnes)	(kg/p)[b]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
PET (1)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
HDPE (2)	0	0.0	1,000	0.1	3,000	0.1	1,000	0.0	0	0.0	1,000	0.0	1,000	0.0
PVC (3)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LDPE (4)	28,000	1.1	18,000	0.7	12,000	0.4	29,000	0.0	59,000	2.3	32,000	1.2	39,000	1.4
PP (5)	0	0.0	0	0.0	2,000	0.1	1,000	0.0	2,000	0.1	1,000	0.1	4,000	0.1
PS (6)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
EPS (6)	0	0.0	0	0.0	0	0.0	0	1.1	0	0.0	0	0.0	0	0.0
Bioplastic (7)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1,000	0.0
Other (7)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Unidentified	NR[c]	NR[c]	0	0.0	3,000	0.1	9,000	0.0	0	0.0	0	0.0	1,000	0.0
Total	**29,000**	**1.2**	**19,000**	**0.8**	**20,000**	**0.8**	**40,000**	**1.6**	**62,000**	**2.4**	**34,000**	**1.3**	**45,000**	**1.7**

a) PET (1) – Polyethylene terephthalate (PIC 1) | HDPE (2) – High-density polyethylene (PIC 2) | PVC (3) – Polyvinyl chloride (PIC 3) | LDPE (4) – Low-density polyethylene (PIC 4) | PP (5) – Polypropylene (PIC 5) | PS (6) – Polystyrene (PIC 6) | EPS (6) – Expanded polystyrene (PIC 6). PIC – Plastic identification code.

b) kg/p – kilograms per person.

c) NR – not reported.

Table F-38 – Plastic packaging recovery in 2023–24, by material type and collection service.

Material type	MSW[a]	C&I[a]	C&D[a]	CDS[a]	Other	Total	
	(tonnes)	(tonnes)		(tonnes)	(tonnes)	(tonnes)	(%)
PET (1)	59,000	0	0	48,000	0	107,000	41.8%
HDPE (2)	57,000	12,000	0	2,000	0	70,000	27.5%
PVC (3)	<500	<500	0	0	<500	0	0.1%
LDPE (4)	2,000	36,000	0	<500	1,000	39,000	15.3%
PP (5)	13,000	12,000	0	0	3,000	28,000	11.1%
PS (6)	<500	1,000	0	0	<500	1,000	0.4%
EPS (6)	<500	7,000	0	0	<500	7,000	2.8%
Bioplastic (7)	1,000	0	0	0	<500	1,000	0.3%
Other (7)	<500	<500	0	0	<500	0	0.0%
Unidentified	1,000	0	1,000	0	<500	2,000	0.6%
Total (tonnes)	**132,000**	**68,000**	**1,000**	**49,000**	**5,000**	**255,000**	**-**
Total (%)	**51.8%**	**26.8%**	**0.3%**	**19.3%**	**1.8%**	**-**	**100.0%**

a) Municipal solid waste (MSW), commercial and industrial (C&I) waste, construction and demolition (C&D), and container deposit scheme (CDS) collection services.

Table F-39 – Plastic packaging recovery in 2023–24, by material type and rigid/flexible classification.

Material type	Rigid	Flexible	Total
	(tonnes)	(tonnes)	(tonnes)
PET (1) – Natural	101,000	0	101,000
PET (1) – Transparent	5,000	0	5,000
PET (1) – Opaque	2,000	0	2,000
HDPE (2) – Natural	46,000	0	46,000
HDPE (2) – Coloured	23,000	1,000	24,000
PVC (3)	0	0	0
LDPE (4)	0	39,000	39,000
PP (5) – Natural	8,000	0	8,000
PP (5) – Coloured	16,000	4,000	20,000
PS (6)	1,000	0	1,000
EPS (6)	7,000	0	7,000
Bioplastic (7)	0	1,000	1,000
Other (7)	0	0	0
Unidentified	1,000	1,000	2,000
Total (tonnes)	**211,000**	**45,000**	**255,000**
Total (%)	**82.4%**	**17.6%**	**100.0%**

Table F-40 – Plastic packaging recovery in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
PET (1) – Natural	0	0	99,000	0	0	0	0	0	0	0	0	2,000	0	0	0	0	101,000
PET (1) – Transparent	0	0	4,000	0	0	0	0	0	0	0	0	0	0	0	0	0	5,000
PET (1) – Opaque	0	0	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	2,000
HDPE (2) – Natural	0	4,000	40,000	0	0	1,000	0	0	0	0	0	1,000	0	0	0	0	46,000
HDPE (2) – Coloured	0	3,000	15,000	0	0	0	0	1,000	4,000	0	0	0	0	0	0	0	24,000
PVC (3)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDPE (4)	2,000	0	0	0	0	0	0	0	0	0	0	0	0	36,000	0	0	39,000
PP (5) – Natural	0	0	3,000	0	0	0	0	0	0	0	0	5,000	0	0	0	0	8,000
PP (5) – Coloured	2,000	1,000	0	0	0	0	0	3,000	1,000	0	0	11,000	0	2,000	1,000	0	20,000
PS (6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,000	0	1,000
EPS (6)	0	0	0	0	3,000	0	0	0	0	0	0	0	0	0	4,000	0	7,000
Bioplastic (7)	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,000
Other (7)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0	1,000	1,000	0	2,000
Total (tonnes)	**6,000**	**7,000**	**163,000**	**0**	**3,000**	**1,000**	**0**	**4,000**	**5,000**	**0**	**0**	**20,000**	**0**	**39,000**	**6,000**	**0**	**255,000**
Total (%)	**2.2%**	**2.9%**	**63.9%**	**0.0%**	**1.3%**	**0.6%**	**0.0%**	**1.8%**	**1.9%**	**0.2%**	**0.0%**	**7.7%**	**0.0%**	**15.2%**	**2.4%**	**0.0%**	**100.0%**

a) RPC – Returnable plastic crate.

Table F-41 – Rigid plastic packaging recovery in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
PET (1) – Natural	0	0	99,000	0	0	0	0	0	0	0	0	2,000	0	0	0	0	101,000
PET (1) – Transparent	0	0	4,000	0	0	0	0	0	0	0	0	0	0	0	0	0	5,000
PET (1) – Opaque	0	0	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	2,000
HDPE (2) – Natural	0	4,000	40,000	0	0	1,000	0	0	0	0	0	1,000	0	0	0	0	46,000
HDPE (2) – Coloured	0	3,000	15,000	0	0	0	0	1,000	4,000	0	0	0	0	0	0	0	23,000
PVC (3)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDPE (4)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PP (5) – Natural	0	0	3,000	0	0	0	0	0	0	0	0	5,000	0	0	0	0	8,000
PP (5) – Coloured	0	1,000	0	0	0	0	0	3,000	1,000	0	0	11,000	0	0	1,000	0	16,000
PS (6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,000	0	1,000
EPS (6)	0	0	0	0	3,000	0	0	0	0	0	0	0	0	0	4,000	0	7,000
Bioplastic (7)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other (7)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,000	0	1,000
Total (tonnes)	**0**	**7,000**	**163,000**	**0**	**3,000**	**1,000**	**0**	**4,000**	**5,000**	**0**	**0**	**20,000**	**0**	**0**	**6,000**	**0**	**211,000**
Total (%)	**0.0%**	**3.5%**	**77.6%**	**0.0%**	**1.6%**	**0.7%**	**0.0%**	**2.1%**	**2.3%**	**0.0%**	**0.0%**	**9.3%**	**0.0%**	**0.0%**	**2.9%**	**0.0%**	**100.0%**

a) RPC – Returnable plastic crate.

Table F-42 – Flexible plastic packaging recovery in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
PET (1) – Natural	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PET (1) – Transparent	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PET (1) – Opaque	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HDPE (2) – Natural	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HDPE (2) – Coloured	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,000
PVC (3)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LDPE (4)	2,000	0	0	0	0	0	0	0	0	0	0	0	0	36,000	0	0	39,000
PP (5) – Natural	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PP (5) – Coloured	2,000	0	0	0	0	0	0	0	0	0	0	0	0	2,000	0	0	4,000
PS (6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EPS (6)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bioplastic (7)	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,000
Other (7)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0	1,000	0	0	1,000
Total (tonnes)	**6,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**39,000**	**0**	**0**	**45,000**
Total (%)	**12.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.9%**	**0.0%**	**0.0%**	**0.0%**	**86.6%**	**0.0%**	**0.0%**	**17.6%**

a) RPC – Returnable plastic crate.

Table F-43 – Plastic packaging recovery in 2023–24, by material type and destination of material.

Material type	Local	Overseas	Unknown destinations	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)
PET (1) – Natural	59,000	41,000	1,000	101,000
PET (1) – Transparent	3,000	2,000	0	5,000
PET (1) – Opaque	1,000	1,000	0	2,000
HDPE (2) – Natural	32,000	14,000	1,000	46,000
HDPE (2) – Coloured	16,000	7,000	1,000	24,000
PVC (3)	0	0	0	0
LDPE (4)	10,000	29,000	0	39,000
PP (5) – Natural	5,000	3,000	0	8,000
PP (5) – Coloured	20,000	1,000	0	20,000
PS (6)	1,000	0	0	1,000
EPS (6)	1,000	6,000	0	7,000
Bioplastic (7)	1,000	0	0	1,000
Other (7)	0	0	0	0
Unidentified	1,000	1,000	0	2,000
Total (tonnes)	**148,000**	**105,000**	**3,000**	**255,000**
Total (%)	**58.0%**	**40.9%**	**1.1%**	**100.0%**

Table F-44 – Plastic packaging recovery suitable for food contact applications, by material type.

Material type	Into food contact applications or suitable for food contact applications		Not suitable for food contact applications		Unknown suitability for food contact applications		Total
	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)	(tonnes)
PET (1) – Natural	61,000	60%	4,000	4%	36,000	36%	101,000
PET (1) – Transparent	3,000	58%	1,000	29%	1,000	13%	5,000
PET (1) – Opaque	0	9%	1,000	89%	0	2%	2,000
HDPE (2) – Natural	18,000	39%	21,000	45%	7,000	15%	46,000
HDPE (2) – Coloured	0	0%	24,000	100%	0	0%	24,000
PVC (3)	0	0%	0	100%	0	0%	0
LDPE (4)	0	1%	10,000	26%	29,000	73%	39,000
PP (5) – Natural	2,000	25%	4,000	48%	2,000	27%	8,000
PP (5) – Coloured	0	0%	20,000	100%	0	0%	20,000
PS (6)	0	0%	1,000	71%	0	29%	1,000
EPS (6)	0	0%	4,000	49%	4,000	51%	7,000
Bioplastic (7)	0	0%	1,000	100%	0	0%	1,000
Other (7)	0	0%	0	100%	0	0%	0
Unidentified	0	0%	1,000	51%	1,000	49%	2,000
Total	**84,000**	**33%**	**92,000**	**36%**	**79,000**	**31%**	**255,000**

Table F-45 – Plastic packaging post-consumer recovery rates in 2023–24, by material type.

Material type	POM	Recovery	Recovery rate
	(tonnes)	(tonnes)	(%)
PET (1) – Natural	184,000	101,000	55%
PET (1) – Transparent	21,000	5,000	21%
PET (1) – Opaque	12,000	2,000	12%
HDPE (2) – Natural	170,000	46,000	27%
HDPE (2) – Coloured	129,000	24,000	19%
PVC (3)	9,000	0	3%
LDPE (4)	272,000	39,000	14%
PP (5) – Natural	100,000	8,000	8%
PP (5) – Coloured	169,000	20,000	12%
PS (6)	12,000	1,000	9%
EPS (6)	26,000	7,000	28%
Bioplastic (7)	9,000	1,000	8%
Other (7)	15,000	0	0%
Unidentified	141,000	2,000	1%
Total	**1,269,000**	**255,000**	**20%**

Table F-46 – Rigid plastic packaging post-consumer recovery rates in 2023–24, by material type.

Material type	POM	Recovery	Recovery rate
	(tonnes)	(tonnes)	(%)
PET (1) – Natural	180,000	101,000	56%
PET (1) – Transparent	21,000	5,000	21%
PET (1) – Opaque	7,000	2,000	23%
HDPE (2) – Natural	150,000	46,000	31%
HDPE (2) – Coloured	67,000	23,000	35%
PVC (3)	2,000	0	1%
LDPE (4)	16,000	0	2%
PP (5) – Natural	55,000	8,000	15%
PP (5) – Coloured	126,000	16,000	13%
PS (6)	11,000	1,000	9%
EPS (6)	26,000	7,000	28%
Bioplastic (7)	8,000	0	0%
Other (7)	0	0	3%
Unidentified	78,000	1,000	1%
Total	**748,000**	**211,000**	**28%**

Table F-47 – Flexible plastic packaging post-consumer recovery rates in 2023–24, by material type.

Material type	POM	Recovery	Recovery rate
	(tonnes)	(tonnes)	(%)
PET (1) – Natural	4,000	0	0%
PET (1) – Transparent	0	0	NR[a]
PET (1) – Opaque	6,000	0	0%
HDPE (2) – Natural	20,000	0	0%
HDPE (2) – Coloured	62,000	1,000	1%
PVC (3)	6,000	0	4%
LDPE (4)	256,000	39,000	15%
PP (5) – Natural	45,000	0	0%
PP (5) – Coloured	43,000	4,000	9%
PS (6)	0	0	0%
EPS (6)	0	0	0%
Bioplastic (7)	2,000	1,000	50%
Other (7)	15,000	0	0%
Unidentified	63,000	1,000	1%
Total	**521,000**	**45,000**	**9%**

a) NR – not reported.

F.3.3 Projections to 2028–29

Table F-48 – Plastic packaging POM (mass and per capita bases) from 2021–22 to 2028–29, by material type.

Material type	2021–22		2022–23		2023–24		2024–25		2025–26		2026–27		2027–28		2028–29		5-yr CAGR[b]
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(%/yr)
PET (1)	179,000	6.9	203,000	7.6	218,000	8.0	230,000	8.4	244,000	8.8	258,000	9.2	274,000	9.6	290,000	10.0	5.9%
HDPE (2)	332,000	12.8	292,000	11.0	299,000	11.0	314,000	11.5	329,000	11.8	345,000	12.2	362,000	12.7	380,000	13.1	4.9%
PVC (3)	11,000	0.4	10,000	0.4	9,000	0.3	8,000	0.3	7,000	0.3	7,000	0.2	7,000	0.2	6,000	0.2	-8.8%
LDPE (4)	328,000	12.6	308,000	11.5	272,000	10.0	282,000	10.3	293,000	10.5	303,000	10.8	315,000	11.0	327,000	11.3	1.2%
PP (5)	253,000	9.7	265,000	9.9	269,000	9.9	272,000	9.9	276,000	9.9	279,000	9.9	283,000	9.9	287,000	9.9	1.3%
PS (6)	17,000	0.6	14,000	0.5	12,000	0.4	12,000	0.4	12,000	0.4	12,000	0.4	12,000	0.4	12,000	0.4	-2.5%
EPS (6)	30,000	1.1	28,000	1.0	26,000	1.0	26,000	1.0	27,000	1.0	27,000	1.0	27,000	1.0	28,000	1.0	0.1%
Bioplastic (7)	2,000	0.1	5,000	0.2	9,000	0.3	11,000	0.4	13,000	0.5	15,000	0.5	18,000	0.6	22,000	0.7	35.5%
Other (7)	17,000	0.7	17,000	0.6	15,000	0.6	15,000	0.6	16,000	0.6	16,000	0.6	16,000	0.6	16,000	0.6	-0.8%
Unidentified	109,000	4.2	124,000	4.7	141,000	5.2	142,000	5.2	144,000	5.2	146,000	5.2	148,000	5.2	149,000	5.2	3.7%
Total	**1,277,000**	**49.1**	**1,265,000**	**47.5**	**1,269,000**	**46.7**	**1,313,000**	**47.9**	**1,360,000**	**48.9**	**1,409,000**	**50.0**	**1,461,000**	**51.1**	**1,517,000**	**52.4**	**3.6%**

a) kg/p – kilograms per person.

b) CAGR – compound annual growth rate

Table F-49 – Rigid plastic packaging POM (mass and per capita bases) from 2021–22 to 2028–29, by material type.

Material type	2021–22		2022–23		2023–24		2024–25		2025–26		2026–27		2027–28		2028–29		5-yr CAGR[b]
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(%/yr)
PET (1)	168,000	6.5	189,000	7.1	208,000	7.7	221,000	8.1	234,000	8.4	248,000	8.8	263,000	9.2	280,000	9.7	6.1%
HDPE (2)	241,000	9.3	214,000	8.0	217,000	8.0	229,000	8.3	241,000	8.7	254,000	9.0	268,000	9.4	283,000	9.8	5.5%
PVC (3)	3,000	0.1	3,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	-5.2%
LDPE (4)	16,000	0.6	18,000	0.7	16,000	0.6	17,000	0.6	19,000	0.7	20,000	0.7	21,000	0.8	23,000	0.8	5.5%
PP (5)	169,000	6.5	178,000	6.7	181,000	6.6	182,000	6.7	184,000	6.6	186,000	6.6	188,000	6.6	190,000	6.6	1.0%
PS (6)	16,000	0.6	14,000	0.5	11,000	0.4	11,000	0.4	12,000	0.4	12,000	0.4	12,000	0.4	12,000	0.4	-2.6%
EPS (6)	30,000	1.1	28,000	1.0	26,000	1.0	26,000	1.0	27,000	1.0	27,000	1.0	27,000	1.0	28,000	1.0	0.1%
Bioplastic (7)	2,000	0.1	4,000	0.1	8,000	0.3	9,000	0.3	11,000	0.4	13,000	0.5	15,000	0.5	18,000	0.6	36.2%
Other (7)	1,000	0.0	5,000	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	-44.8%
Unidentified	55,000	2.1	71,000	2.6	78,000	2.9	79,000	2.9	80,000	2.9	81,000	2.9	82,000	2.9	83,000	2.9	3.3%
Total	**700,000**	**26.9**	**722,000**	**27.1**	**748,000**	**27.5**	**778,000**	**28.4**	**809,000**	**29.1**	**843,000**	**29.9**	**880,000**	**30.8**	**919,000**	**31.8**	**4.2%**

a) kg/p – kilograms per person.

b) CAGR – compound annual growth rate

Table F-50 – Flexible plastic packaging POM (mass and per capita bases) from 2021–22 to 2028–29, by material type.

Material type	2021–22		2022–23		2023–24		2024–25		2025–26		2026–27		2027–28		2028–29		5-yr CAGR[b]
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(%/yr)
PET (1)	11,000	0.4	14,000	0.5	9,000	0.3	10,000	0.3	10,000	0.4	10,000	0.4	10,000	0.4	11,000	0.4	2.6%
HDPE (2)	91,000	3.5	78,000	2.9	82,000	3.0	85,000	3.1	88,000	3.2	91,000	3.2	94,000	3.3	97,000	3.3	3.3%
PVC (3)	8,000	0.3	7,000	0.3	6,000	0.2	6,000	0.2	5,000	0.2	5,000	0.2	5,000	0.2	4,000	0.1	-10.3%
LDPE (4)	312,000	12.0	290,000	10.9	256,000	9.4	265,000	9.7	274,000	9.9	283,000	10.1	293,000	10.3	303,000	10.5	0.9%
PP (5)	84,000	3.2	87,000	3.3	88,000	3.2	90,000	3.3	91,000	3.3	93,000	3.3	95,000	3.3	97,000	3.3	2.0%
PS (6)	1,000	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1.4%
EPS (6)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	N/A
Bioplastic (7)	0	0.0	1,000	0.0	2,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	3,000	0.1	3,000	0.1	32.1%
Other (7)	17,000	0.6	12,000	0.4	15,000	0.6	15,000	0.6	15,000	0.6	16,000	0.6	16,000	0.6	16,000	0.6	6.1%
Unidentified	54,000	2.1	54,000	2.0	63,000	2.3	63,000	2.3	64,000	2.3	65,000	2.3	66,000	2.3	66,000	2.3	4.4%
Total	**577,000**	**22.2**	**543,000**	**20.4**	**521,000**	**19.2**	**535,000**	**19.5**	**550,000**	**19.8**	**566,000**	**20.1**	**581,000**	**20.3**	**598,000**	**20.7**	**2.8%**

a) kg/p – kilograms per person.

b) CAGR – compound annual growth rate

Table F-51 – Plastic packaging reprocessing capacity projections from 2023–24 to 2028–29, by material type.

Material type	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	5 year CAGR[a]
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%/yr)
PET (1)	130,000	130,000	147,000	147,000	147,000	147,000	2.4%
HDPE (2)	124,000	137,000	193,000	214,000	225,000	229,000	13.0%
PVC (3)	2,000	2,000	17,000	17,000	17,000	17,000	52.9%
LDPE (4)	20,000	44,000	101,000	144,000	155,000	160,000	51.9%
PP (5)	57,000	61,000	160,000	187,000	198,000	206,000	29.5%
PS (6)	3,000	3,000	11,000	11,000	11,000	11,000	29.8%
EPS (6)	20,000	20,000	20,000	20,000	20,000	20,000	0.1%
Bioplastic (7)	0	0	0	0	0	0	0.0%
Other (7)	0	0	17,000	17,000	17,000	17,000	152.6%
Mixed (1–7)	0	0	0	0	0	0	N/A
Unidentified	1,000	1,000	32,000	32,000	32,000	32,000	97.2%
Total	**357,000**	**398,000**	**698,000**	**789,000**	**821,000**	**839,000**	**18.6%**

a) CAGR – compound annual growth rate.

Table F-52 – Rigid plastic packaging reprocessing capacity projections from 2023–24 to 2028–29, by material type.

Material type	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	5 year CAGR[a]
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%/yr)
PET (1)	168,000	168,000	176,000	176,000	176,000	176,000	0.9%
HDPE (2)	129,000	141,000	155,000	158,000	158,000	161,000	4.5%
PVC (3)	0	0	2,000	2,000	2,000	2,000	44.4%
LDPE (4)	1,000	1,000	10,000	11,000	11,000	11,000	70.0%
PP (5)	48,000	52,000	74,000	82,000	82,000	83,000	11.5%
PS (6)	3,000	3,000	5,000	5,000	5,000	5,000	9.9%
EPS (6)	23,000	23,000	24,000	24,000	24,000	24,000	0.1%
Bioplastic (7)	0	0	0	0	0	0	0.0%
Other (7)	0	0	3,000	3,000	3,000	3,000	121.7%
Mixed (1–7)	0	0	0	0	0	0	N/A
Unidentified	1,000	1,000	10,000	10,000	10,000	10,000	56.7%
Total	**374,000**	**390,000**	**459,000**	**470,000**	**470,000**	**474,000**	**4.9%**

a) CAGR – compound annual growth rate.

Table F-53 – Flexible plastic packaging reprocessing capacity projections from 2023–24 to 2028–29, by material type.

Material type	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	5 year CAGR[a]
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%/yr)
PET (1)	0	0	8,000	8,000	8,000	8,000	180.7%
HDPE (2)	2,000	2,000	45,000	63,000	74,000	76,000	101.4%
PVC (3)	2,000	2,000	15,000	15,000	15,000	15,000	54.2%
LDPE (4)	48,000	72,000	120,000	163,000	173,000	179,000	29.8%
PP (5)	11,000	11,000	88,000	108,000	119,000	126,000	63.2%
PS (6)	0	0	6,000	6,000	6,000	6,000	322.0%
EPS (6)	0	0	0	0	0	0	N/A
Bioplastic (7)	0	0	0	0	0	0	N/A
Other (7)	0	0	13,000	13,000	13,000	14,000	165.2%
Mixed (1–7)	0	0	0	0	0	0	N/A
Unidentified	1,000	1,000	23,000	23,000	23,000	23,000	97.4%
Total	**64,000**	**89,000**	**320,000**	**400,000**	**432,000**	**446,000**	**47.4%**

a) CAGR – compound annual growth rate.

F.4 Metal packaging in 2023–24

F.4.1 Placed on market

Table F-54 – Metal packaging POM (mass and per capita bases) from 2017–18 to 2023–24, by material type.

Material type	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23		2023–24	
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
Beverage aluminium	79,000	3.2	86,000	3.4	82,000	3.2	95,000	3.7	100,000	3.9	102,000	3.8	104,000	3.8
Non-beverage aluminium	13,000	0.5	14,000	0.6	7,000	0.3	7,000	0.3	11,000	0.4	11,000	0.4	11,000	0.4
Tin-plate steel	121,000	4.8	127,000	5.0	139,000	5.4	125,000	4.9	161,000	6.2	162,000	6.1	152,000	5.6
Mild steel	NR[b]	NR	19,000	0.8	19,000	0.7	26,000	1.0	24,000	0.9	25,000	0.9	19,000	0.7
Stainless steel	NR	NR	0	0.0	1,000	0.0	0	0.0	1,000	0.1	2,000	0.1	2,000	0.1
Total	**213,000**	**8.5**	**246,000**	**9.7**	**248,000**	**9.7**	**254,000**	**9.9**	**298,000**	**11.5**	**302,000**	**11.3**	**289,000**	**10.6**

a) kg/p – kilograms per person.
b) NR – not reported.

Table F-55 – Metal packaging POM in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Beverage aluminium	0	0	0	104,000	0	0	0	0	0	0	0	0	0	0	0	0	104,000
Non-beverage aluminium	0	0	0	7,000	0	1,000	0	0	0	0	0	3,000	0	0	0	0	11,000
Tin-plate steel	0	3,000	0	147,000	0	2,000	0	0	0	0	0	0	0	0	0	0	152,000
Mild steel	0	19,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19,000
Stainless steel	0	2,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,000
Total (tonnes)	**0**	**25,000**	**0**	**258,000**	**0**	**3,000**	**0**	**0**	**0**	**0**	**0**	**3,000**	**0**	**0**	**0**	**0**	**289,000**
Total (%)	**0.0%**	**8.5%**	**0.0%**	**89.3%**	**0.0%**	**0.9%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**

a) RPC – Returnable plastic crate.

Table F-56 – Metal packaging POM in 2023–24, by material type and recycled content.

Material type	Post-consumer source		Pre-consumer source		Virgin source		Total
	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)	(tonnes)
Beverage aluminium	21,000	21%	49,000	47%	34,000	33%	104,000
Non-beverage aluminium	1,000	10%	3,000	26%	7,000	65%	11,000
Tin-plate steel	10,000	6%	20,000	13%	123,000	81%	152,000
Mild steel	2,000	13%	1,000	5%	16,000	82%	19,000
Stainless steel	<500	10%	<500	21%	2,000	69%	2,000
Total	**35,000**	**12%**	**73,000**	**25%**	**182,000**	**63%**	**289,000**

Table F-57 – Metal packaging POM in 2023–24, by material type and sector of use.

Material type	B2C – At home[a]	B2C – AfH[a]	B2B[a]	Other or unknown	Total	
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%)
Beverage aluminium	68,000	36,000	0	0	104,000	36.1%
Non-beverage aluminium	10,000	1,000	0	0	11,000	3.8%
Tin-plate steel	118,000	1,000	33,000	0	152,000	52.6%
Mild steel	0	0	19,000	0	19,000	6.7%
Stainless steel	0	0	2,000	0	2,000	0.8%
Total (tonnes)	**197,000**	**38,000**	**55,000**	**0**	**289,000**	**-**
Total (%)	**68.1%**	**13.0%**	**18.9%**	**0.0%**	**-**	**100.0%**

a) Business-to-consumer (B2C) – At home | Business-to-consumer (B2C) – Away-from-home (AfH) | Business-to-business (B2B).

F.4.2 Recovery

Table F-58 – Metal packaging recovery from 2017–18 to 2023–24, by material type.

Material type	2017–18		2018–19		2019–20		2020–21		2021–22		2022–23		2023–24	
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
Beverage aluminium	53,000	2.1	65,000	2.6	66,000	2.6	73,000	2.8	62,000	2.4	65,000	2.4	67,000	2.5
Non-beverage aluminium	4,000	0.2	3,000	0.1	3,000	0.1	3,000	0.1	3,000	0.1	3,000	0.1	3,000	0.1
Tin-plate steel	45,000	1.8	52,000	2.1	53,000	2.1	53,000	2.1	68,000	2.6	70,000	2.6	76,000	2.8
Mild steel	NR[b]	NR	17,000	0.7	17,000	0.7	18,000	0.7	18,000	0.7	18,000	0.7	15,000	0.5
Stainless steel	NR	NR	0	0.0	1,000	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	**102,000**	**4.1**	**137,000**	**5.4**	**139,000**	**5.4**	**147,000**	**5.7**	**151,000**	**5.8**	**156,000**	**5.9**	**161,000**	**5.9**

a) kg/p – kilograms per person.
b) NR – not reported.

Table F-59 – Metal packaging recovery in 2023–24, by material type and collection service.

Material type	MSW[a]	C&I[a]	C&D	CDS[a]	Other	Total	
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%)
Beverage aluminium	22,000	0	0	45,000	0	67,000	41.6%
Non-beverage aluminium	3,000	0	0	0	0	3,000	1.9%
Tin-plate steel	68,000	7,000	0	0	0	76,000	47.2%
Mild steel	0	14,000	1,000	0	0	15,000	9.3%
Stainless steel	0	0	0	0	0	0	0.0%
Total (tonnes)	**92,000**	**22,000**	**1,000**	**46,000**	**0**	**161,000**	**-**
Total (%)	**57.5%**	**13.4%**	**0.3%**	**28.5%**	**0.2%**	**-**	**100.0%**

a) Municipal solid waste (MSW), commercial and industrial (C&I) waste, construction and demolition (C&D), and container deposit scheme (CDS) collection services.

Table F-60 – Metal packaging recovery in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Beverage aluminium	0	0	0	67,000	0	0	0	0	0	0	0	0	0	0	0	0	67,000
Non-beverage aluminium	0	0	0	3,000	0	0	0	0	0	0	0	0	0	0	0	0	3,000
Tin-plate steel	0	0	0	76,000	0	0	0	0	0	0	0	0	0	0	0	0	76,000
Mild steel	0	15,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15,000
Stainless steel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (tonnes)	**0**	**15,000**	**0**	**146,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**161,000**
Total (%)	**0.0%**	**9.3%**	**0.0%**	**90.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**

a) RPC – Returnable plastic crate.

Table F-61 – Metal packaging recovery in 2023–24, by material type and destination of material.

Material type	Local	Overseas	Unknown destinations	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Beverage aluminium	0	67,000	0	67,000
Non-beverage aluminium	0	3,000	0	3,000
Tin-plate steel	0	75,000	0	76,000
Mild steel	14,000	0	0	15,000
Stainless steel	0	0	0	0
Total (tonnes)	**15,000**	**146,000**	**0**	**161,000**
Total (%)	**9.3%**	**90.7%**	**0.0%**	**100.0%**

Table F-62 – Metal packaging post-consumer recovery rates in 2023–24, by material type.

Material type	POM	Recovery	Recovery rate
	(tonnes)	(tonnes)	(%)
Beverage aluminium	104,000	67,000	64%
Non-beverage aluminium	11,000	3,000	26%
Tin-plate steel	152,000	76,000	50%
Mild steel	19,000	15,000	77%
Stainless steel	2,000	0	0%
Total	**289,000**	**161,000**	**55%**

F.4.3 Projections to 2028–29

Table F-63 – Metal packaging POM (mass and per capita bases) from 2021–22 to 2028–29, by material type.

Material type	2021–22		2022–23		2023–24		2024–25		2025–26		2026–27		2027–28		2028–29		5-yr CAGR[b]
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(%/yr)
Beverage aluminium	100,000	3.9	102,000	3.8	104,000	3.8	107,000	3.9	109,000	3.9	111,000	3.9	113,000	4.0	115,000	4.0	2.0%
Non-beverage aluminium	11,000	0.4	11,000	0.4	11,000	0.4	11,000	0.4	11,000	0.4	11,000	0.4	12,000	0.4	12,000	0.4	1.2%
Tin-plate steel	161,000	6.2	162,000	6.1	152,000	5.6	158,000	5.8	164,000	5.9	170,000	6.0	176,000	6.2	183,000	6.3	3.8%
Mild steel	24,000	0.9	25,000	0.9	19,000	0.7	20,000	0.7	20,000	0.7	20,000	0.7	20,000	0.7	21,000	0.7	1.2%
Stainless steel	1,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	2,000	0.1	1.2%
Total	**298,000**	**11.5**	**302,000**	**11.3**	**289,000**	**10.6**	**298,000**	**10.9**	**306,000**	**11.0**	**315,000**	**11.2**	**324,000**	**11.3**	**333,000**	**11.5**	**2.9%**

a) kg/p – kilograms per person.

b) CAGR – compound annual growth rate.

Table F-64 – Metal packaging reprocessing capacity projections from 2023–24 to 2028–29, by material type.

Material type	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	5 year CAGR[a]
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%/yr)
Beverage aluminium	1,000	2,000	2,000	2,000	2,000	2,000	14.9%
Non-beverage aluminium	1,000	1,000	1,000	1,000	1,000	1,000	0.0%
Tin-plate steel	1,000	1,000	1,000	1,000	1,000	1,000	0.0%
Mild steel	1,000	1,000	1,000	1,000	1,000	1,000	0.0%
Stainless steel	0	0	0	0	0	0	N/A
Total	**4,000**	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**	**3.8%**

a) CAGR – compound annual growth rate.

F.5 Wood packaging in 2023–24

F.5.1 Placed on market

Table F-65 – Wood packaging POM (mass and per capita bases) from 2018–19 to 2023–24, by material type.

Material type	2018–19		2019–20		2020–21		2021–22		2022–23		2023–24	
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
Fibreboard – Low-density	0	0.0	50,000	2.0	94,000	3.7	42,000	1.6	33,000	1.2	29,000	1.1
Fibreboard – OSB[b]	0	0.0	50,000	2.0	37,000	1.5	25,000	1.0	20,000	0.7	21,000	0.8
Hardwood	6,000	0.3	81,000	3.1	60,000	2.3	63,000	2.4	90,000	3.4	71,000	2.6
Softwood	118,000	4.6	281,000	10.9	446,000	17.3	482,000	18.5	420,000	15.7	402,000	14.8
Total	**124,000**	**4.9**	**462,000**	**18.0**	**638,000**	**24.8**	**612,000**	**23.5**	**562,000**	**21.1**	**523,000**	**19.2**

a) kg/p – kilograms per person.

b) OSB – Oriented strand board.

Table F-66 – Wood packaging POM in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Fibreboard – Low-density	0	0	0	0	0	0	0	29,000	0	0	0	0	0	0	0	0	29,000
Fibreboard – OSB	0	0	0	0	0	0	0	21,000	0	0	0	0	0	0	0	0	21,000
Hardwood	0	8,000	0	0	0	0	0	63,000	0	0	0	0	0	0	0	0	71,000
Softwood	0	0	0	0	16,000	0	0	384,000	0	0	1,000	0	0	0	0	0	402,000
Total (tonnes)	**0**	**8,000**	**0**	**0**	**16,000**	**0**	**0**	**497,000**	**0**	**0**	**1,000**	**0**	**0**	**0**	**0**	**0**	**523,000**
Total (%)	**0.0%**	**1.5%**	**0.0%**	**0.0%**	**3.1%**	**0.0%**	**0.0%**	**95.1%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**

a) RPC – Returnable plastic crate.

Table F-67 – Wood packaging POM in 2023–24, by material type and recycled content.

Material type	Post-consumer source		Pre-consumer source		Virgin source		Total
	(tonnes)	(%)	(tonnes)	(%)	(tonnes)	(%)	(tonnes)
Fibreboard – Low-density	4,000	13%	4,000	13%	21,000	73%	29,000
Fibreboard – OSB	0	0%	0	0%	21,000	100%	21,000
Hardwood	0	0%	0	0%	71,000	100%	71,000
Softwood	0	0%	0	0%	402,000	100%	402,000
Total	**4,000**	**1%**	**4,000**	**1%**	**515,000**	**99%**	**523,000**

Table F-68 – Wood packaging POM in 2023–24, by material type and sector of use.

Material type	B2C – At home[a]	B2C – AfH[a]	B2B[a]	Other or unknown	Total	
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%)
Fibreboard – Low-density	0	0	29,000	0	29,000	5.5%
Fibreboard – OSB	0	0	21,000	0	21,000	4.0%
Hardwood	0	0	71,000	0	71,000	13.6%
Softwood	0	1,000	401,000	0	402,000	76.9%
Total (tonnes)	**0**	**1,000**	**521,000**	**0**	**523,000**	**-**
Total (%)	**0.0%**	**0.3%**	**99.7%**	**0.0%**	**-**	**100.0%**

a) Business-to-consumer (B2C) – At home | Business-to-consumer (B2C) – Away-from-home (AfH) | Business-to-business (B2B).

F.5.2 Recovery

Table F-69 – Wood packaging recovery from 2018–19 to 2023–24, by material type.

Material type	2018–19		2019–20		2020–21		2021–22		2022–23		2023-24	
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)
Fibreboard	0	0.0	9,000	0.4	5,000	0.2	2,000	0.1	1,000	0.0	1,000	0.0
Hardwood	2,000	0.1	36,000	1.4	36,000	1.4	35,000	1.3	53,000	2.0	50,000	1.8
Softwood	42,000	1.7	125,000	4.9	219,000	8.5	240,000	9.2	233,000	8.7	252,000	9.3
Total	**44,000**	**1.8**	**171,000**	**6.6**	**260,000**	**10.1**	**277,000**	**10.7**	**286,000**	**10.7**	**302,000**	**11.1**

a) kg/p – kilograms per person.

Table F-70 – Wood packaging recovery in 2023–24, by material type and collection service.

Material type	MSW[a]	C&I[a]	C&D[a]	Other	Total	
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%)
Fibreboard	0	1,000	0	0	1,000	0.2%
Hardwood	0	50,000	0	0	50,000	16.5%
Softwood	0	252,000	0	0	252,000	83.3%
Total (tonnes)	**0**	**302,000**	**0**	**0**	**302,000**	**-**
Total (%)	**0.0%**	**100.0%**	**0.0%**	**0.0%**	**-**	**100.0%**

a) Municipal solid waste (MSW), commercial and industrial (C&I) waste, and construction and demolition (C&D) collection services.

Table F-71 – Wood packaging recovery in 2023–24, by material type and component group.

Material type	Bag or pouch	Barrel or drum	Bottle or jar	Can	Carton or box	Closure	Label or seal	Pallet or bin	RPC[a]	Shopping bag	Tableware	Tub, tray or punnet	Tube or cartridge	Wrap	Other	Unknown	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Fibreboard	0	0	0	0	0	0	0	1,000	0	0	0	0	0	0	0	0	1,000
Hardwood	0	2,000	0	0	0	0	0	48,000	0	0	0	0	0	0	0	0	50,000
Softwood	0	0	0	0	0	0	0	252,000	0	0	0	0	0	0	0	0	252,000
Total (tonnes)	**0**	**2,000**	**0**	**0**	**0**	**0**	**0**	**300,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**302,000**
Total (%)	**0.0%**	**0.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**99.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**

a) RPC – Returnable plastic crate.

Table F-72 – Wood packaging recovery in 2023–24, by material type and destination of material.

Material type	Local	Overseas	Unknown destinations	Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Fibreboard	1,000	0	0	1,000
Hardwood	49,000	1,000	0	50,000
Softwood	251,000	1,000	0	252,000
Total (tonnes)	**301,000**	**1,000**	**0**	**302,000**
Total (%)	**99.7%**	**0.3%**	**0.0%**	**100.0%**

Table F-73 – Wood packaging post-consumer recovery rates in 2023–24, by material type.

Material type	POM	Recovery	Recovery rate
	(tonnes)	(tonnes)	(%)
Fibreboard	50,000	1,000	1%
Hardwood	71,000	50,000	70%
Softwood	402,000	252,000	63%
Total	**523,000**	**302,000**	**58%**

F.5.3 Projections to 2028–29

Table F-74 – Wood packaging POM (mass and per capita bases) from 2021–22 to 2028–29, by material type.

Material type	2021–22		2022–23		2023–24		2024–25		2025–26		2026–27		2027–28		2028–29		5-yr CAGR[b]
	(tonnes)	(kg/p)[a]	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(tonnes)	(kg/p)	(%/yr)
Fibreboard – Low-density	42,000	1.6	33,000	1.2	29,000	1.1	30,000	1.1	31,000	1.1	32,000	1.1	33,000	1.2	34,000	1.2	3.5%
Fibreboard – OSB[c]	25,000	1.0	20,000	0.7	21,000	0.8	21,000	0.8	22,000	0.8	23,000	0.8	23,000	0.8	24,000	0.8	3.0%
Hardwood	63,000	2.4	90,000	3.4	71,000	2.6	72,000	2.6	73,000	2.6	75,000	2.6	76,000	2.7	77,000	2.7	1.6%
Softwood	482,000	18.5	420,000	15.7	402,000	14.8	419,000	15.3	437,000	15.7	456,000	16.2	476,000	16.7	496,000	17.2	4.3%
Total	**612,000**	**23.5**	**562,000**	**21.1**	**523,000**	**19.2**	**543,000**	**19.8**	**564,000**	**20.3**	**586,000**	**20.8**	**608,000**	**21.3**	**632,000**	**21.8**	**3.9%**

a) kg/p – kilograms per person.
b) CAGR – compound annual growth rate.
c) OSB – Oriented strand board.

Table F-75 – Wood packaging reprocessing capacity projections from 2023–24 to 2028–29, by material type.

Material type	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	5 year CAGR[a]
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(%/yr)
Fibreboard	1,000	1,000	1,000	1,000	1,000	1,000	0.0%
Hardwood	55,000	55,000	57,000	57,000	57,000	57,000	0.8%
Softwood	271,000	271,000	271,000	271,000	271,000	271,000	0.0%
Total	**327,000**	**327,000**	**329,000**	**329,000**	**329,000**	**329,000**	**0.1%**

a) CAGR – compound annual growth rate.

F.6 Packaging losses to landfill in 2023–24

Packaging losses to landfill

Table F-76 – Post-consumer packaging to landfill in 2023–24, by material group.

Material group	POM	Landfill		Landfill rate
	(tonnes)	(tonnes)	(%)	(%)
Paper & paperboard	3,693,000	1,256,000	53%	34%
Glass	1,063,000	212,000	9%	20%
Plastic – Rigid	748,000	537,000	23%	72%
Plastic – Flexible	521,000	476,000	17%	91%
Metal	289,000	129,000	5%	45%
Wood	523,000	220,000	9%	42%
Total	**6,837,000**	**2,830,000**	**100%**	**41%**

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