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# AUSTRALIAN PACKAGING CONSUMPTION & RESOURCE RECOVERY DATA

APCO
AUSTRALIAN PACKAGING COVENANT ORGANISATION

# Contents





**Acknowledgements**
We acknowledge and thank the packaging manufacturing and reprocessing companies around Australia that took the time to respond to our information request for this project. The completion of this study was only possible because of your valuable and expert contributions.

**Authors**
Report prepared by Envisage Works, IndustryEdge, Institute for Sustainable Futures, Randell Environmental Consulting and Sustainable Resource Use on behalf of the Australian Packaging Covenant Organisation.

# Executive summary

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 2025 National Packaging Targets (2025 Targets), as shown in Figure 1; providing a clear mandate to deliver a new sustainable pathway for packaging in Australia.

This report provides the 2017–18 financial year baseline packaging consumption and recovery data for Australia, **to inform the measurement of progress towards the 2025 Targets**. APCO commissioned the collection of this data from new and existing sources to enable Australia to not only benchmark our current system, but also to **support strategic planning** across all levels of the life cycle of packaging – from design, manufacturing, use, disposal and end-of-life fate. This report portrays **granular data** on the packaging ecosystem that we have **never had before**, providing transparency to the areas in which we are excelling and to those which require collective attention to enable the transition to a circular economy.

The data collection, analysis and reporting has been undertaken in a manner that will support year-on-year comparisons into the future. This report also provides forecasts of key packaging material flow quantities out to 2025 under different scenarios.

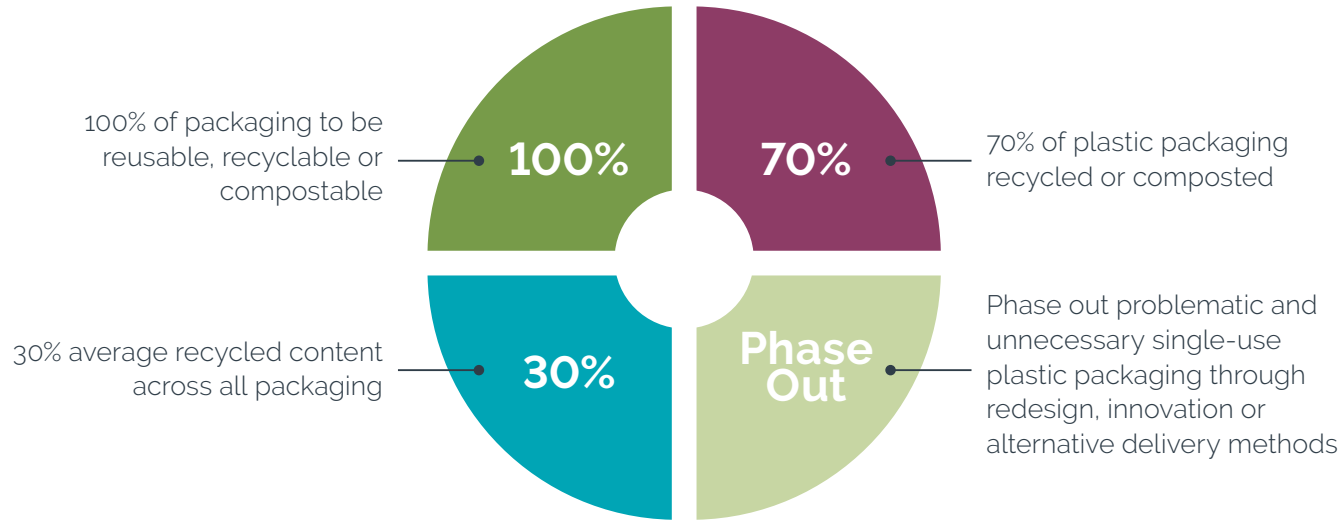


***Figure 1:*** *Australia's 2025 National Packaging Targets*

# Packaging consumption in 2017–18

Total packaging **placed on the market (POM)** in Australia in 2017–18 is estimated at **5.45 million tonnes (±13%)**. POM means that the packaging has been made available to the end-consumer (including business users).

Of the 5.45 million tonnes of packaging POM in 2017–18, **over half of this was paper and paperboard** packaging (53.2%), followed by glass packaging (23.3%), plastic packaging (19.6%) and metal packaging (3.9%).

Estimates for packaging POM by material group are provided in Table 1 and Figure 2. The aggregated accuracy range estimates for each of the material groups are also provided as error bars in Figure 2. The estimates include consumer and business-to-business (B2B) packaging.

***Table 1*** *Packaging POM in 2017–18, by material group*

| MATERIAL GROUP | TOTAL POM | | ACCURACY RANGE |
|---|---|---|---|
| | (TONNES) | (%) | (±%) |
| Paper and paperboard | 2 901 000 | 53.2% | 7% |
| Glass | 1 273 000 | 23.3% | 17% |
| Plastic | 1 067 000 | 19.6% | 21% |
| Metal | 213 000 | 3.9% | 23% |
| **Total** | **5 453 000** | **100.0%** | **13%** |

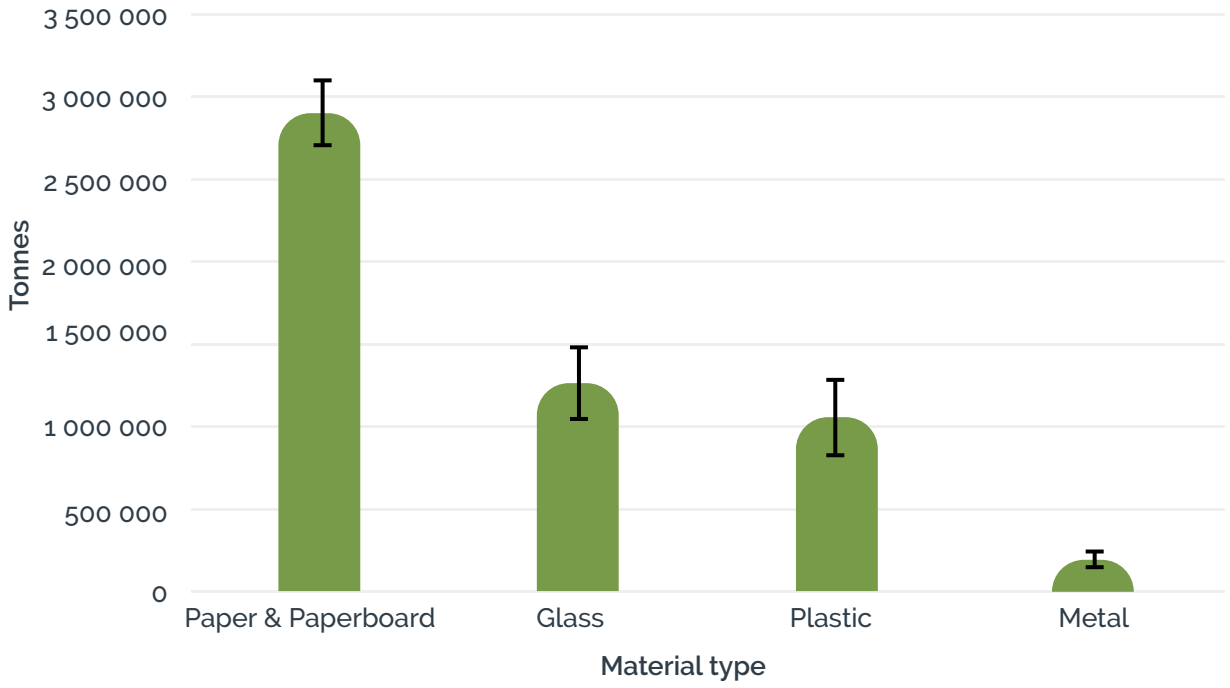


***Figure 2*** *– Packaging POM in 2017–18, by material group (tonnes)*

# Packaging recovered in 2017–18

Of the 5.45 million tonnes (±13%) of post-consumer packaging POM in Australia in 2017-18, it is estimated that **2.67million tonnes (±14%)** was recovered. This number is measured at the out-going gate of the secondary processing facility for the used packaging.

Over two thirds of this was **paper and paperboard packaging (68.0%)**, followed by **glass packaging (21.8%)**, **plastic packaging (6.5%)** and **metal packaging (3.8%)**.

Estimates for post-consumer packaging recovery by material group are provided in Table 2 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 municipal, commercial and industrial (C&I) and container deposit scheme (CDS) collection services.

***Table 2** – Post-consumer packaging recovery in 2017–18, by material group*

| MATERIAL GROUP | RECOVERY | | ACCURACY RANGE |
|---|---|---|---|
| | (TONNES) | (%)A | (±%) |
| Paper and paperboard | 1 817 000 | 68.0% | 11% |
| Glass | 582 000 | 21.8% | 23% |
| Plastic | 173 000 | 6.5% | 15% |
| Metal | 102 000 | 3.8% | 21% |
| **Total** | **2 673 000** | **100.0%** | **14%** |

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

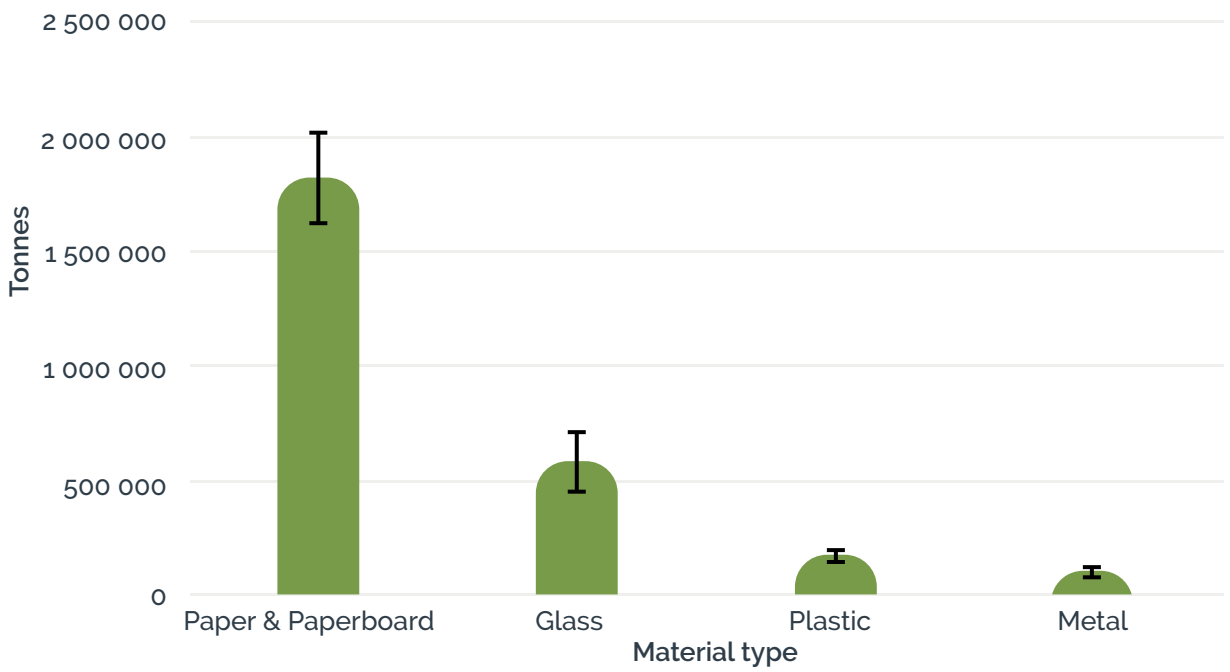


***Figure 3** – Post-consumer packaging recovery in 2017–18, by material group (tonnes)*

# Packaging recovery rates in 2017–18

The Australian post-consumer packaging recovery rate in 2017–18 is estimated at **49%**. This is based on the recovery of each material group as measured at the out-going gate of the secondary processing facility for the used packaging (summarised above), divided by the related packaging POM by material group.

Paper and paperboard have the **highest recovery rate at 63%**, followed by **metal packaging at 48%**, **glass packaging at 46%** and **plastic packaging at the low level of only 16%**.

***Table 3** – Post-consumer packaging recovery rates in 2017–18, by material group*

| MATERIAL GROUP | POM (TONNES) | RECOVERY (TONNES) | RECOVERY RATE (%) |
|---|---|---|---|
| Paper and paperboard | 2 901 000 | 1 817 000 | 63% |
| Glass | 1 273 000 | 582 000 | 46% |
| Plastic | 1 067 000 | 173 000 | 16% |
| Metal | 213 000 | 102 000 | 48% |
| **Total** | **5 453 000** | **2 673 000** | **49%** |

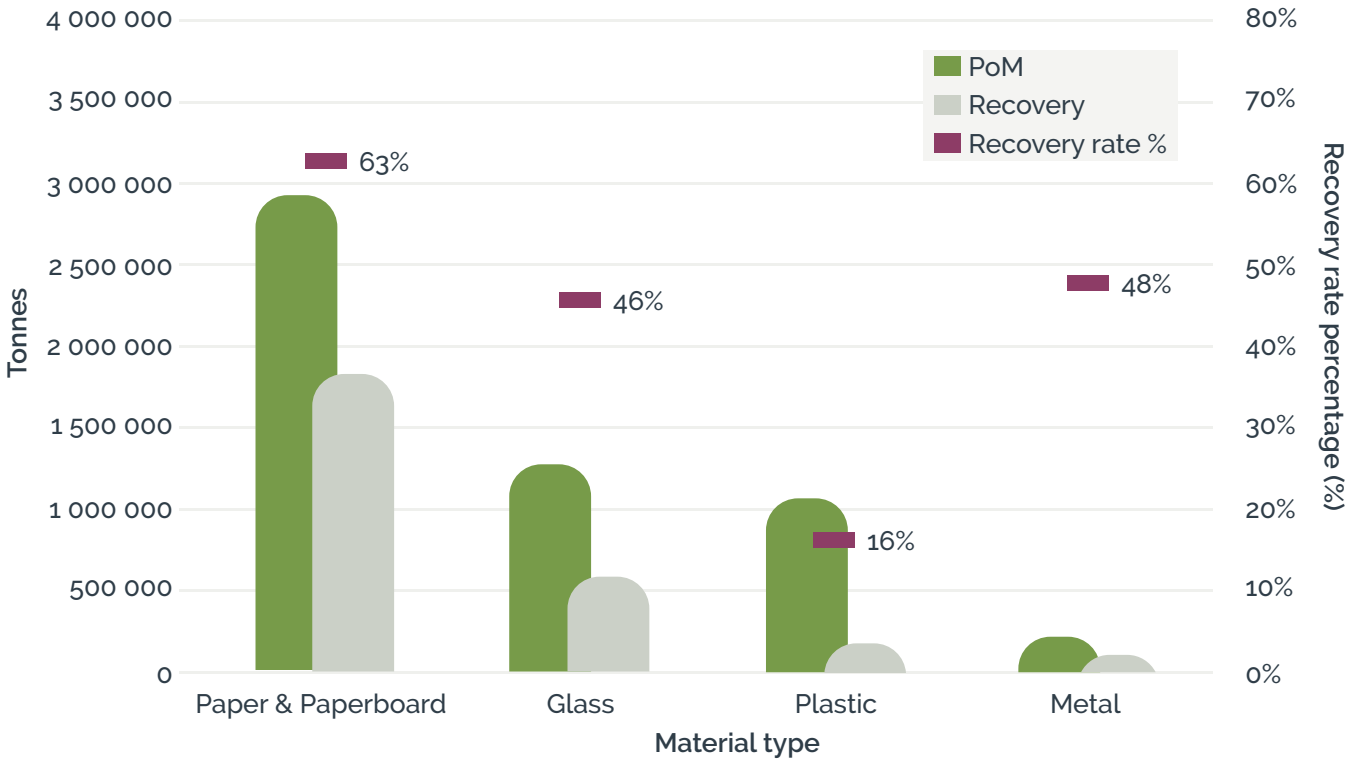


***Figure 4** – Post-consumer packaging recovery rates in 2017–18, by material group*

# Packaging recycled content in 2017–18

Estimates of the recycled content incorporated into packaging POM in 2017–18, by material group, are provided in Table 4 and Figure 5. The post-consumer recycled content across all packaging was 1.9 million tonnes, or 35% of total packaging POM, the pre-consumer recycled content was 0.7 million tonnes (12%), and nearly 2.9 million tonnes (53%) was sourced from virgin (primary) feedstocks.

***Table 4** – Packaging POM in 2017–18, by material group and recycled content*

| MATERIAL GROUP | POST-CONSUMER SOURCE (TONNES) | PRE-CONSUMER SOURCE (TONNES) | VIRGIN SOURCE (TONNES) | TOTAL (TONNES) |
|---|---|---|---|---|
| Paper and paperboard | 1 421 000 | 441 000 | 1 038 000 | 2 901 000 |
| Glass | 407 000 | 146 000 | 720 000 | 1 273 000 |
| Plastic | 23 000 | 7 000 | 1 037 000 | 1 067 000 |
| Metal | 64 000 | 68 000 | 81 000 | 213 000 |
| **Total (tonnes)** | **1 915 000** | **661 000** | **2 876 000** | **5 453 000** |
| **Total (%)** | **35%** | **12%** | **53%** | **100%** |

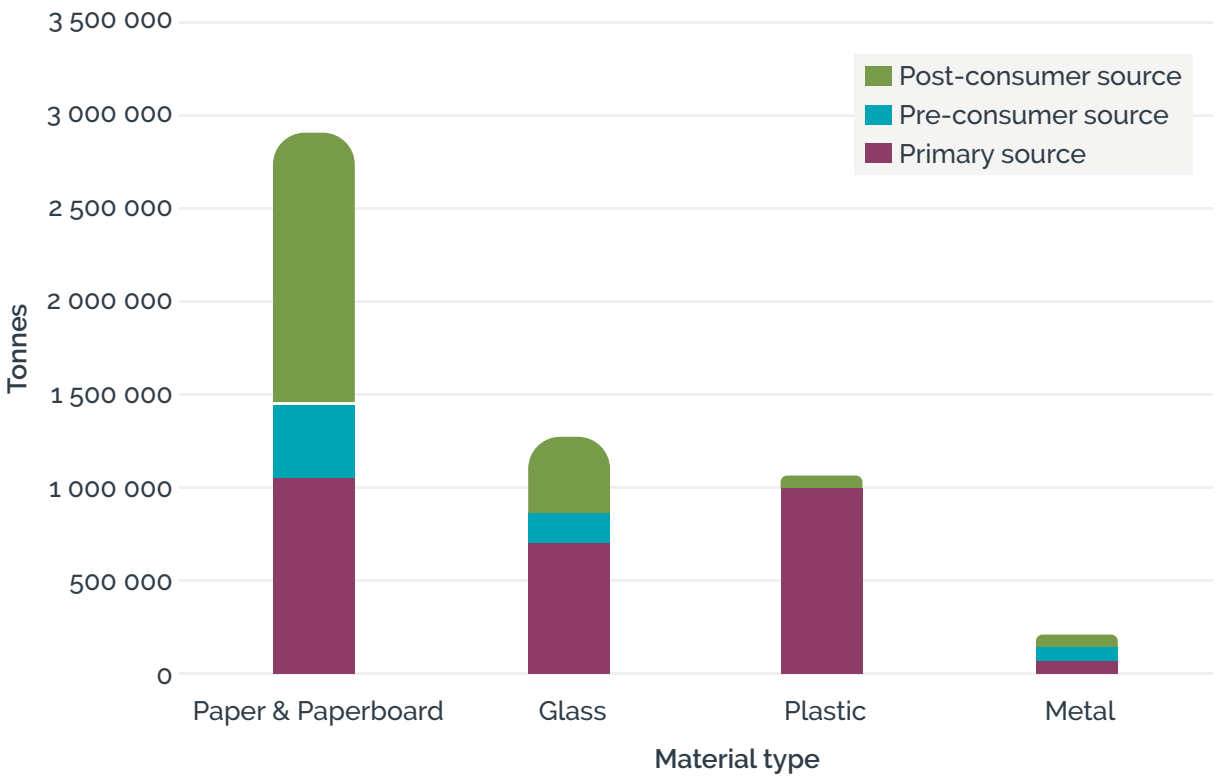


***Figure 5** – Packaging POM in 2017–18, by material group and recycled content (tonnes)*

# Packaging recyclability in 2017–18

Provided in Table 5 below is an outline of packaging recyclability classifications and definitions that have been adopted for the purpose of this report.

Estimates of recyclable packaging or compostable packaging POM in 2017–18 are provided in Table 6 and Figure 6. Reusable packaging POM has not been quantified. See Appendix A for the full definitions of these three terms.

Note throughout the report the term packaging recyclability is used as an umbrella term for recyclable, compostable or reusable packaging.

The agreed determination of the recyclability, compostability and reusability of all packaging formats is a developing area, and the estimates provided here are indicative only.

Further investigation and consultation is required to resolve an agreed method and packaging classifications to improve the determination of this evaluation measure. For example, the reusability, recyclability or compostability classifications could be systematically aligned with the related Packaging Recyclability Evaluation Portal (PREP) classification algorithms.

***Table 5** – Packaging recyclability classifications and definitions*

| CLASSIFICATION | DESCRIPTION | SCOPE |
|---|---|---|
| Good recyclability | Technically recyclable, collection and recycling services are widely available and there are viable end markets. | All bottles and jars, all cans, fibre-based cartons and boxes (but not PCPBs), tubs, trays and punnets, LDPE film, fibre-based 'other'. |
| Poor recyclability | Recyclable with lost value and/or more limited recycling services and/or may contaminate other recycling streams. | PCPBs, PVC, all wraps and film seals (except for LDPE film), EPS. |
| Not recyclable | Not technically recyclable and/or no recycling service available. | Remaining material (except for 'Unknown'). |
| Unknown recyclability | Insufficient information to determine recoverability. | - |

## Recyclable or compostable packaging POM in 2017–18, by recyclability classification

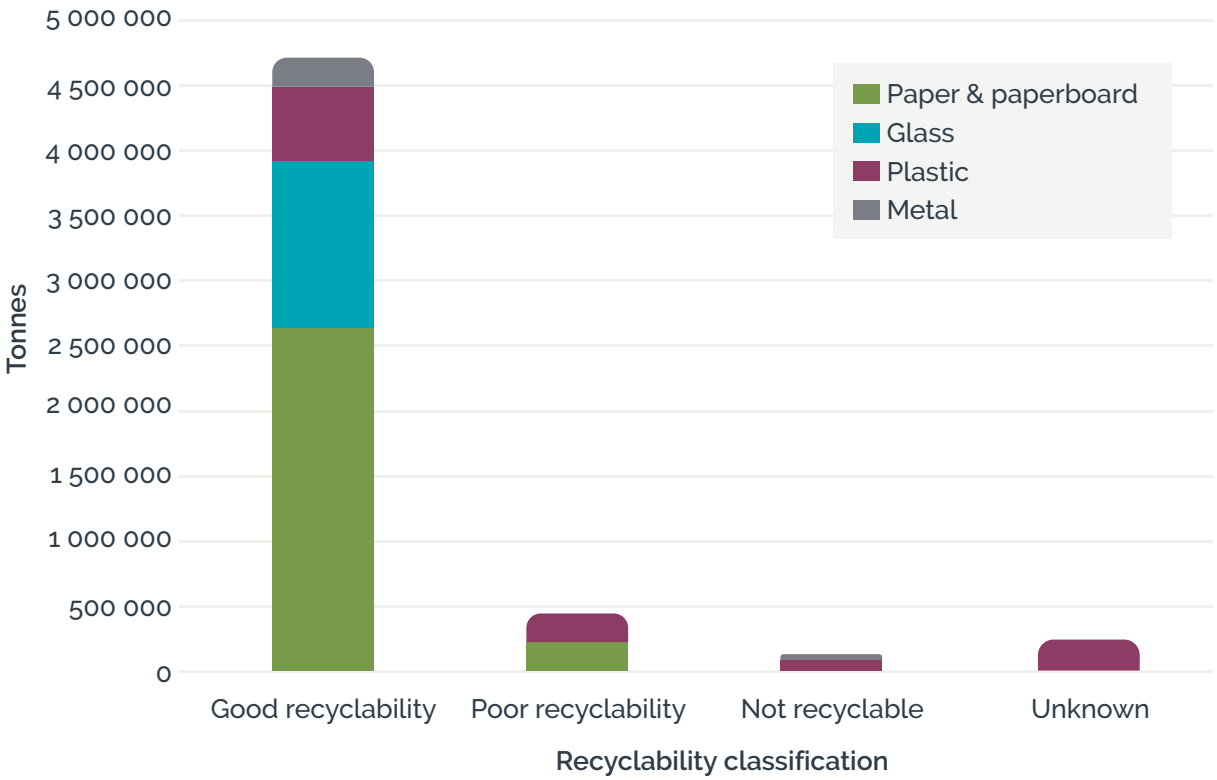


*Figure 6 – Recyclable or compostable packaging POM in 2017–18, by recyclability classification*

*Table 6 – Recyclable or compostable packaging POM in 2017–18, by recyclability classification*

| MATERIAL GROUP | GOOD RECYCLABILITY (TONNES) | POOR RECYCLABILITY (TONNES) | NOT RECYCLABLE (TONNES) | UNKNOWN (TONNES) | TOTAL (TONNES) |
|---|---|---|---|---|---|
| Paper and paper-board | 2 658 000 | 227 000 | 15 000 | 0 | 2 901 000 |
| Glass | 1 273 000 | 0 | 0 | 0 | 1 273 000 |
| Plastic | 572 000 | 181 000 | 83 000 | 231 000 | 1 067 000 |
| Metal | 204 000 | 0 | 9 000 | 0 | 213 000 |
| **Total (tonnes)** | **4 707 000** | **408 000** | **107 000** | **231 000** | **5 453 000** |
| **Total (%)** | **86%** | **8%** | **2%** | **4%** | **100%** |

It is estimated that **4.7 million tonnes (86%)** of packaging POM in 2017–18 has good recyclability. This is dominated by paper & paperboard (of which 92% has good recyclability) and glass (of which 100% has good recyclability). 96% of metal packaging is classified as having good recyclability, but only 54% of plastic packaging is classified as having good recyclability.

Around 0.5 million tonnes (10%) of packaging is classified as having poor recyclability or being not recyclable. Around 51% of these quantities is plastic packaging, and another 47% is paper & paperboard packaging.

# The National Packaging Targets and related 2017–18 results

Provided in Figure 7 below, is a summary of the key packaging consumption and recovery data, compared to the related 2025 Targets.

As can be seen in Figure 8 the most challenging of the 2025 Targets to meet may be the achievement of the recycling or composting of 70% of Australia's plastic packaging by 2025.

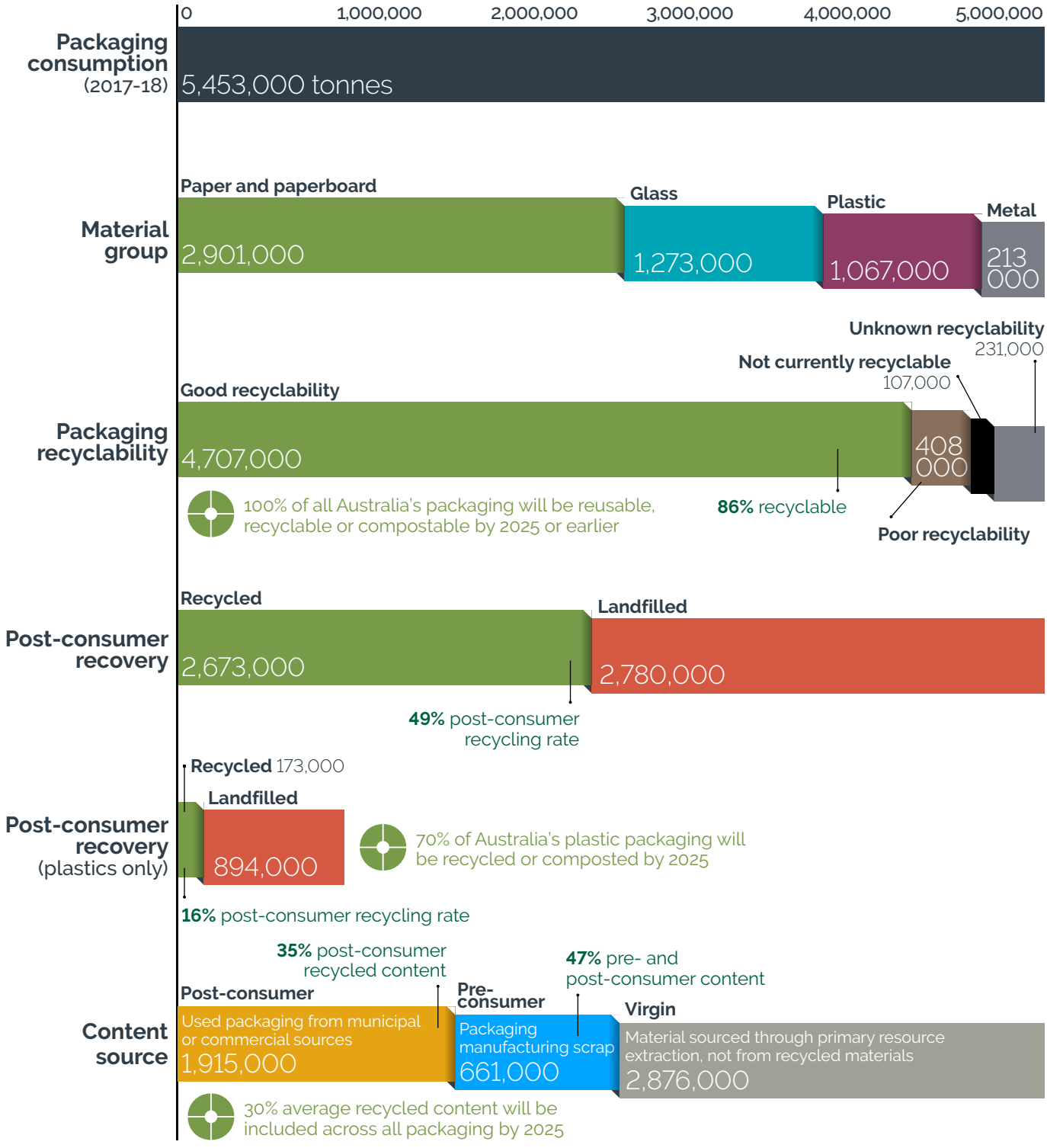


*Figure 7 – Packaging data in 2017–18 and the National Packaging Targets (tonnes)*

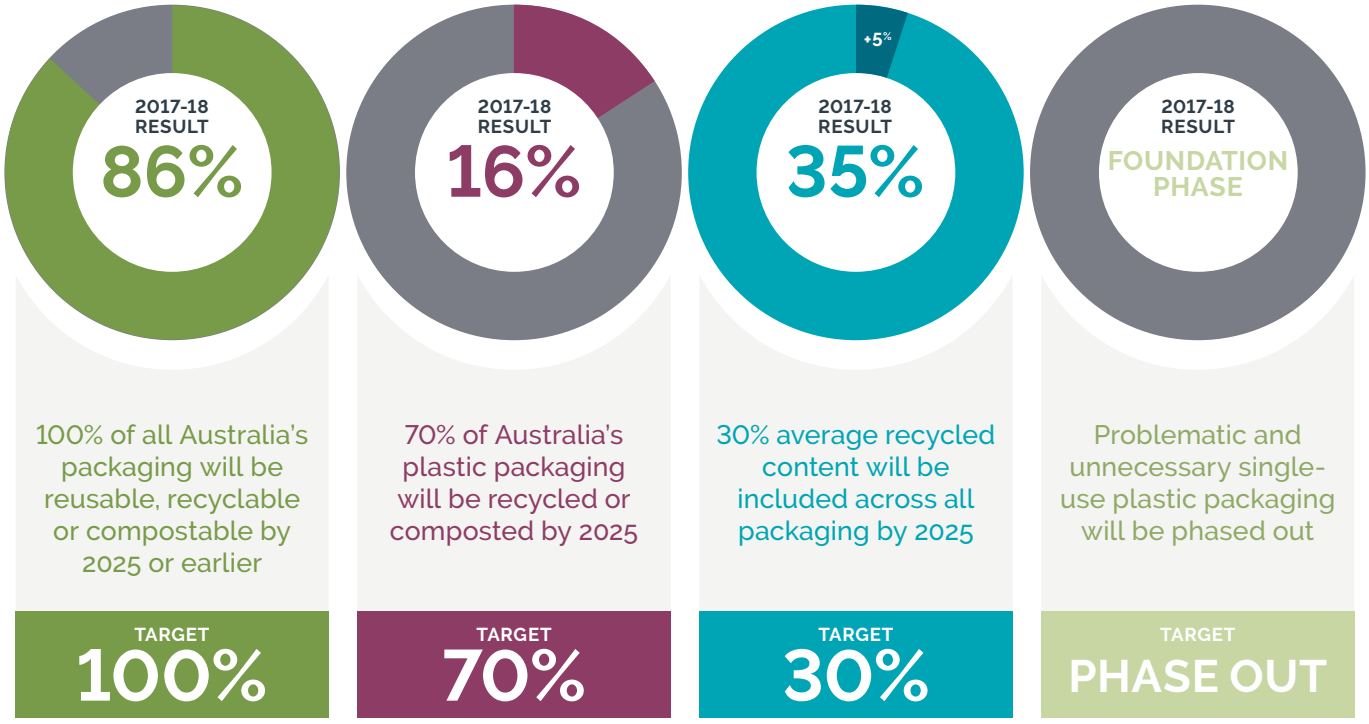


***Figure 8** – Summary of the National Packaging Targets and related 2017–18 results*

# Project Methodology

### Consumption quantification

Locally manufactured Australian packaging consumption has been determined through a survey of packaging manufacturers nationally, with production data estimated for all significant survey non-respondents.

Imported and exported new packaging has been determined through analysis of Australian Harmonized Tariff Item Statistical Code (HTISC) import data.

Packaging consumption is measured in terms of packaging (POM).

### Recovery quantification

Australian packaging recovery has been determined through a survey of packaging reprocessors nationally, with recovery data estimated for all significant survey non-respondents.

Exported scrap packaging has been determined through analysis of Australian Harmonized Export Commodity Classification (AHECC) export data, and surveys with packaging reprocessors and exporters.

Recovery is measured at the out-going gate of the secondary processing facility for the used packaging. This is the point at which 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 flaking and washing facilities, and metal smelting facilities.

The 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.

To contact APCO please visit our website
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