Estimate of Packaging Waste in Australian Waste Streams

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1 Introduction

This paper was prepared in response to a request from Mr Martin Byrne of the Waste Branch of the Environment Protection Agency. Existing recent (post 1990) sources of data on waste composition have been analysed to estimate the amount of packaging waste in Australian waste streams. In some cases, packaging material was not separately identified in the composition studies, and estimates have been an "educated guess " based on material types.

The accuracy of the estimates would generally be +/- 20 % (ie an estimate of 25 % packaging waste in a waste stream could be 20 - 30 %, with say 90 % confidence).

The data refer to waste to disposal; ie waste from generators destined for recycling, and separated out by the generator for this purpose, have been excluded from the data set.

2 Summary of Packaging in Australian Waste Streams, as a % of waste stream

Waste Stream	Plastic Packaging	Glass Packaging	Steel Packaging	Paper Packaging	Aluminium Packaging	Wood Packaging	Total Packaging
Domestic, >110l/week	8.0	7.0	3.1	6.4	0.69		25.2
Domestic, <110l/week	10	8.5	2.4	9.2	0.7		30.1
Other Domestic	0.3	0.94	1.2	4.5	1.3		6.4
Comm & Ind	8	1	1	20	0.1	8	38
Building & Demolition							10
Total							**25**

Notes :

1 Domestic, >110l/week, is for waste streams arising from residences provided with more than 110L per week of waste bin capacity, by a variety of bins including multiple 55l bins, 120 l bins and 240 l bins. It is recognised that the mix of bin size as well as capacity will influence waste composition, but the data is currently not extensive enough to be able to undertake such an analysis. The data for this waste stream was derived from composition studies in Mitcham (SA)(AMDEL 1991), five Councils in Melbourne (Vic EPA, 1991), five Councils in Hobart (Tas R&LAC, 1991), and three Councils in Sydney (CRCWMPC, 1995).

2 Domestic, <110 L/week, data is taken from Composition study of Woollahra in 1994(CRCWMPC, 1995).

3 Other Domestic waste is taken from a composition study of Woollahra in 1994.(CRCWMPC, 1995)

4 Commercial and Industrial is taken from inferring packaging content of material types in a composition study of mixed C&I waste by Maunsell for the RRRC in Victoria.(RRRC 1994)

5 The packaging waste content of Building and Demolition waste is a guess.

6 The Total waste stream is assumed to be composed of 25% Domestic, 10 % Other Domestic, 36% Commercial and Industrial and 29% Building and Demolition waste (this was used in determining the amount of all packaging in the total waste stream).

3 Amount of packaging waste in Australian Waste Streams, in kg / person / week

Waste Stream	Plastic Packaging	Glass Packaging	Steel Packaging	Paper Packaging	Aluminium Packaging	Total
Domestic, >110l/week	0.31	0.35	0.15	0.27	0.03	1.11

Notes

1 Based on data from Mitcham (SA), Five Councils in Melbourne and Five Councils in Hobart.

2 Assumed 2.5 people per household in Melbourne and Hobart.

4 Cautionary Notes Use of This Data

A number of factors influence the reliability of this set of data, and these should be kept in mind when using the data for any purpose :

- Much of the data is for studies undertaken in 1991. There has been a significant increase in domestic waste recycling since that time, so that these data may be overestimates of quantities.
- In composition studies, it is not possible to completely separate all material types. Food or Kitchen waste typically becomes entangled with wrapping paper, plastic and aluminium, and the wrapping is usually included in the kitchen waste component. Hence packaging weights and associated %s tend to be underestimated by this phenomenon.
- Packaging materials often become saturated with water by the time they are sorted in a composition study. This is particularly so for cardboard and paper. This phenomenon therefore tends to increase the apparent weight of packaging in sorting studies, particularly for paper and cardboard. Ideally waste composition studies should be undertaken with sorting at the place of generation (eg the kitchen). Such studies are currently underway at UNSW using student's households as the study area.

5 References

AMDEL, 1991; 1991 Waste Composition Study Mitcham City Council Area, for the SAWMC.

CRC for Waste Management and Pollution Control, 1995; Waste Characterisation Study of the Eastern Suburbs of Sydney, for the NSW EPA.

RRRC, June 1994 Newsletter, Commercial and Industrial Waste Survey.

Tasmanian Recycling and Litter Awareness Council, 1991; Domestic Waste Composition Study, May 1991.

Victorian EPA; 1991; Garbage Analysis Program Stage 5, 1990 - 1991, Publ No 283; Nov 1991.