

National Waste Reporting 2013

FACTSHEET – COMMERCIAL AND INDUSTRIAL (C&I) WASTE PROFILE 2010–11

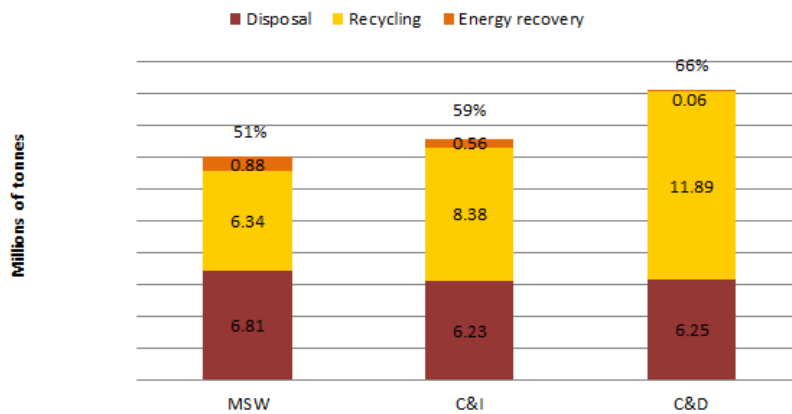
Key fact: In 2010-11, 59 per cent of the C&I waste generated in Australia was recovered.

Commercial and industrial waste is waste that is produced by institutions and businesses; including waste from schools, restaurants, offices, retail and wholesale businesses, and manufacturing¹.

In 2010–11, 15.17 million tonnes of C&I waste was generated nationally, of which:

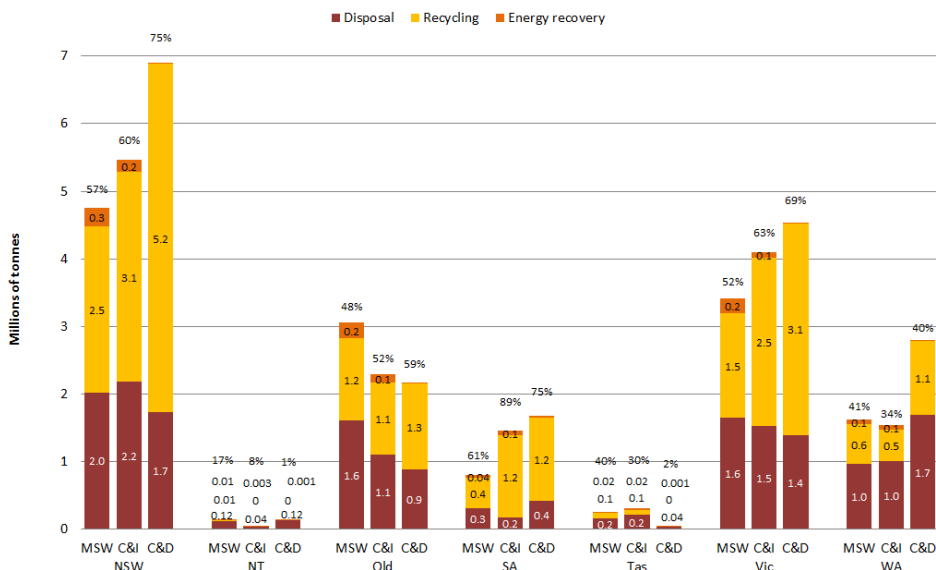
- 6.23 million tonnes (41 per cent) were disposed of to landfill
- 8.38 million tonnes (55 per cent) were recycled
- 0.56 million tonnes (four per cent) were used in energy recovery.

Figure 1 Australia total waste generation by waste stream and management (excluding ACT), 2010–11



The overall recovery of C&I resources was 59 per cent. However, the C&I waste stream may present the greatest opportunities for improving recovery, especially wastes that are delivered to landfill in homogenous loads (e.g cardboard or food).

Figure 2 Australia total waste generation by waste stream and management, and jurisdiction (excluding ACT), 2010–11



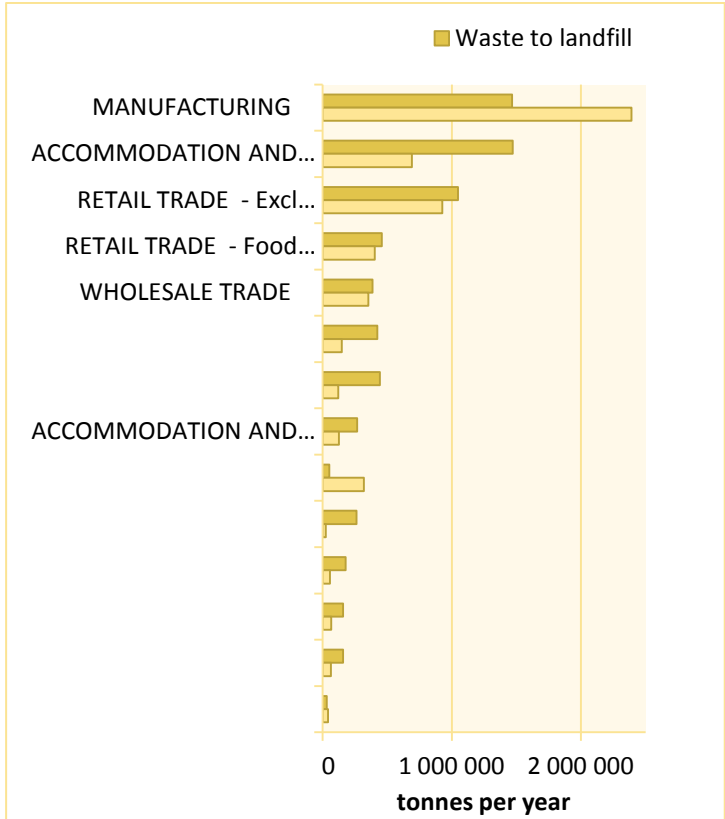
¹ National Waste Report 2010, http://www.sew.gov.au/resource/ephc-archive-waste-management#National_waste_policy

Due to the diversity of the C&I industry, breaking it down into industry divisions and sub-divisions² reveals the granularity in the information. This may provide a more meaningful way to identify and enable more targeted responses to C&I waste issues and track trends over time.

A 2013 study into C&I waste and recycling by industry division identified two sub-divisions for priority action: the retail trade (food retail) and the accommodation and food services (food servicing) sectors as they generate large amounts of waste in total, generate a high proportion of waste per employee i.e. have a high waste ‘intensity’, and have high levels of recoverable material sent to landfill. This study also revealed the considerable differences in recycling rates across the C&I sector. The transport, postal and warehousing industry division has an 86 per cent recycling rate with a waste profile that includes a high proportion of readily recyclable freight packaging materials such as cardboard, timber pallets and plastic film. Conversely, the rental, hiring and real estate services industry division has a nine per cent recycling rate with its waste profile dominated by masonry materials and timber³ from businesses including property managers and body corporate management. The majority of this waste is sent to landfill. Office-based sectors attained a recycling rate of up to 57 per cent largely due to paper recovery but sometimes far lower (see Figure 3).

The manufacturing industry was the highest generator of organic waste at 1.12 million tonnes, but has a recovery rate of 55 per cent which is likely to relate to the production of uncontaminated waste streams which can be relatively easily collected for recovery. By contrast, the accommodation and food services sector, which was the second highest generator of organic waste at 1.01 million tonnes, had a recycling rate of only 7.6 per cent.

Figure 3 Waste to landfill and recycling by each industry division⁴



Source: [A study into C&I commercial and industrial \(C&I\) waste and recycling in Australia by industry division](#)

² Under the Australian and New Zealand Standard Industrial Classification
³ This is attributed to construction and demolition waste
⁴ Derived primarily from 2010–2011 data

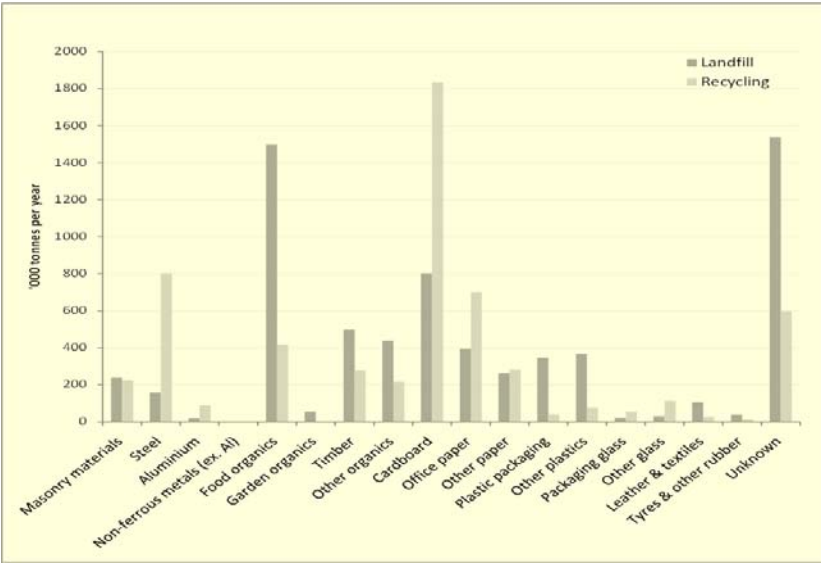
The manufacturing, retail trade and accommodation and food services industry sectors also represent 68 per cent of the potential available opportunities to avoid greenhouse gas emissions in this sector through increased diversion to recycling⁵.

Key materials in the C&I waste stream

A key area for focus is food organics as it is the material category that is generated, and sent to landfill, in the highest quantity and it may also contaminate otherwise readily recyclable material such as cardboard. The food retail and food and beverage services sectors are the sources of most food waste. Recovery of food is often poor, even at food services locations where it is likely to be well over half the waste stream. Reducing the amount of organic waste sent to landfill also avoids the generation of methane as it decomposes in landfill.

Readily recyclable materials such as cardboard and paper are still not recycled to the maximum extent possible (see Figure 4). Packaging, such as cardboard, paper, timber and soft plastics, is a significant proportion of the waste stream in almost all industry divisions and there still significant opportunities to recover more of all packaging materials from the C&I waste stream. This includes increased source separation of these materials, collection via the supply chain and preventing contamination e.g. with food waste. Packaging supplier take-back improvements could focus on the potential for larger scale adoption of reusable freight packaging.

Figure 4 Summary the C&I waste/recycling streams by material (for industries studied)⁶



Source: A study into C&I commercial and industrial (C&I) waste and recycling in Australia by industry division

Barriers and opportunities for increased recovery

The C&I stream is much more difficult to influence than the MSW or C&D streams. Waste management may represent a small cost relative to other business operating costs and many businesses consider waste management as one of the fixed costs of doing business. However, a better understanding of the full costs of waste to business has the potential to improve recovery outcomes. The total cost of material inputs that are subsequently disposed of as waste is estimated as \$26.5 billion per year. Although some of this cost will be unavoidable, there is potential for reducing it with increased material efficiency through waste avoidance and recycling.

⁵ Based on the assumption that 100 per cent of the waste currently generated was recycled.
⁶ Derived primarily from 2010–2011 data.

Volume-based charging mechanisms dominate commercial waste collection which means there is no financial incentive to change practice if there is a set collection fee whether containers are totally full at collection or not. Mass-based reporting and/or charging is becoming more popular, due to market demand from generators who are seeking to measure their waste performance, but this service typically comes at an additional cost.

Resource recovery in the C&I sector may be achieved through uptake of source separation systems that allow for relatively clean streams of homogenous materials to be collected and processed or via technology solutions that can recover resources from mixed C&I waste streams. However, the lack of long-term, high volume contracts to sustain steady material flows of feedstock in sufficient quantities for operators to remain commercially competitive represents a major barrier to justifying significant investment in processing technology for the C&I sector. This is reflected in reduced infrastructure capacity for sorting mixed C&I wastes in Australia, especially compared with the construction and demolition or municipal solid waste sectors.

There may be space restrictions for multiple bins to separate recyclable materials and businesses may be deterred by the cost, or perceived cost, of recycling. This includes not only the lift price but also perceived costs associated with source segregations compared to the use of a single mixed-waste bin.

Different waste contractors may have access to different infrastructure which will affect the nature of the service they can offer C&I generators. Local government may provide recycling collections to commercial sites, mostly to small and medium enterprises. Local government servicing may offer a cost effective way to expand C&I recycling. However, recycling from C&I by local government will only work effectively if the service meets the recycling needs of business. Many local governments offer the same service to industry as they do to householders (e.g. 240 litre wheelie bins for waste and recycling) which is not necessarily suitable for C&I waste.

Some small businesses, particularly at industrial estates, have trialled collaboration with other local businesses to collect greater, more economically viable quantities of materials. Industrial businesses can often produce large quantities of a relatively clean waste stream and significant cost savings and landfill reduction can be achieved if complementary businesses can be identified who could use a 'waste stream' as their feedstock. This process is called industrial ecology or symbiosis and the Australasian Industrial Ecology Network was formed in 2009 to support the "development of activities, processes and relationships between entities which convert surplus, spent or unwanted materials, energy and services into valuable resources"⁷.

There may be a lack of knowledge on what can be recovered from the waste stream and how to go about changing services and contracts. For example around a quarter of businesses in NSW do not have source separation bins for paper. As these are currently offered at a very low price, price is not assumed to be a barrier. Instead inertia, transition costs including education, administration and space constraints appear to be the most likely obstacles. Market demand can be an effective driver where there are sufficient quantities of resources to obtain services that may not be offered up front by waste contractors.

⁷ Australian Industry Ecology Network, <http://www.wmaa.asn.au/>. - Accessed 22 November 2013.

There are opportunities to use supply chains to a greater extent to efficiently collect and aggregate packaging and product wastes for recovery. Some wholesalers are introducing schemes where they collect material from retailers after deliveries have been made in order to aggregate recycling collection. This is often at the request of retail customers and may not be provided to all of the wholesaler's customers. Not all wholesalers collate recyclables from their customers. Where it does occur it is a valuable product stewardship initiative. For example, the major dairies are using the return of crates to also offer the return of HDPE milk bottles for recycling. This aggregation of recyclables may be a good case study for other supplier return services.

Currently there are few restrictions on the disposal to landfill based on recyclability. In Europe, one of the primary tools for achieving waste diversion for recycling is the use of restrictions on recyclables to landfill. This approach is being taken up in some Australian jurisdictions, notably South Australia. It is also a way to make recycling more cost-competitive.

Other opportunities for greater recovery are:

- measurement and evaluation of recycling performance and generation rates within businesses to identify inefficiencies and opportunities.
- greater consideration of waste avoidance and recovery e.g. reusable packaging and a product stewardship approach to designing packaging for effective sorting and recovery and increased uptake of disposable products made from recyclable materials.
- collection of waste streams that are not currently 'standard' to recover e.g. textiles.
- increased effort in identifying new opportunities for material recovery e.g. there is a developing market for absorbent hygiene products like adult nappies sourced from nursing homes.
- improving the performance of energy recovery at landfill.

For more information on C&I waste see:

- [*A study into C&I commercial and industrial \(C&I\) waste and recycling in Australia by industry division*](#)
- [*Place-based approaches to commercial and industrial waste and recycling*](#)
- Planet Ark's website <http://businessrecycling.com.au/>
- *Waste generation and resource recovery in Australia*
- *Waste generation and resource recovery in Australia* workbooks

CASE STUDY – MANAGING COMMERCIAL WASTE IN THE ACT

The Government released the *ACT Waste Management Strategy 2011–2025* (the Waste Strategy) which set targets of over 85 per cent resource recovery by 2020 and over 90 per cent by 2025. The outcomes targeted by the strategy - less waste generated; full resource recovery; a clean environment and a carbon neutral waste sector—are consistent with those of the National Waste Policy. The strategy, consultation documents, supporting studies and cost-benefit analysis can be found at: www.environment.act.gov.au/waste

The ACT Government has been working to improve the resource recovery of commercial waste through programs and facilitations of infrastructure provisions. To this end, the Government continued to deliver its highly successful ACTSmart Office and the ACTSmart Business programs that facilitate on-site waste reduction and recycling by Canberra businesses. Many participants in these programs have not only reduced waste to landfill but have reduced their waste removal costs. A total of 7205 cubic metres of waste was diverted from landfill by the 203 accredited ACTSmart sites in 2012–13. A total of 633 sites across the ACT are participating in the programs and many non-accredited sites have also achieved reductions in waste to landfill and increases in recycling. The ACTSmart Business and Office programs are also delivered to businesses and offices in Queanbeyan through a cross border agreement with Queanbeyan City Council.

The ACT also implemented a ban on lightweight plastic shopping bags which came into effect on 1 November 2011. The Government committed to an interim review of the ban on lightweight shopping bags after a twelve month period of the ban in operation. The review evaluated community acceptance, reduction in plastic bag use, environmental outcomes and retailer compliance. The results of the Interim Review highlight support for the plastic bags ban in the ACT.

The ACT Government has continued its efforts to improve the management and recovery of electronic waste and commercial waste. In May 2012 the ACT became the first Australian jurisdiction to open free e-waste drop off centres under the Commonwealth's National Television and Computer Recycling Scheme.

In 2012 the Government endorsed the Framework for a Carbon Neutral ACT Government, outlining a focus on energy efficiency measures as the cost effective approach for achieving carbon neutrality in 2020. The Framework includes a strategy on whole of Government procurement in particular Action 37: Sustainable Procurement Policy. This action outlines the integration of environmental specifications into procurement policy and procedures by 2014. This builds on the existing procurement directions captured in whole of Government circulars: Optimising Whole of Life Costs (2010–11) and Sustainable procurement (2007–08).

In January 2013 the Government called for Expressions of Interest (EOI) from industry to provide waste processing systems to recover resources from urban forest materials and residual waste streams. After Commercial waste, residual household waste and wood waste are the largest contributors to landfill in the ACT.