

Data on exports of recyclables from Australia to China

Version 2 – revised to include new information on source streams and jurisdictions of origin and to cover China’s April 2018 announcement

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Background

During 2017 and early 2018, China made three announcements restricting the import of certain types of waste materials. This has had significant global consequences for industries dealing with these materials, leading to commodity price reductions, stockpiling and instability in the provision of recycling collection services.

To appreciate the scale of this issue in Australia, it is important to understand the quantities of affected materials that were being sent to China prior to the restrictions. Blue Environment was asked by the Australian Government’s Department of the Environment and Energy to answer this question by analysing Australian Bureau of Statistics exports data.

Quantity data

The most recent national data (2014-15) had Australia generating 64 million tonnes (Mt) of waste, sending 35 Mt (54%) to recycling, 4% to energy recovery and 42% to disposal in landfill and incineration. In 2016-17 Australia exported (to all countries) 4.23 Mt of recycled materials including 1.27 to China (30%). Of the recyclables Australia sent to China, 1.25 Mt (99%) are affected by the new restrictions. The graphic below presents data on the waste materials affected by the restrictions.

Graphic 1 Data on Australian exports of recyclables affected by the Chinese restrictions

Recycled material type	A) Quantity of these materials exported to China in 2016-17 ^{1, 2} (thousands of tonnes)	B) Quantity of these materials exported to all countries in 2016-17 ² (thousands of tonnes)	C) Quantity of these materials ³ recycled in 2014-15 ⁴ (thousands of tonnes)	A) divided by B) ⁵	A) divided by C) ⁵
Metals ⁶	203	2,159	4,569	9%	4%
Paper & cardboard ⁷	920	1,453	3,228	63%	29%
Plastics ⁸	125	182	346	68%	36%
All recycled materials	1,248	3,823	34,770 ⁹		

Notes:

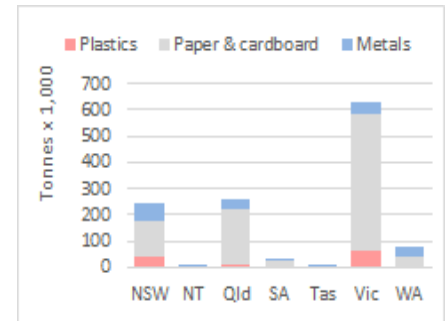
- ¹ Including mainland China, Hong Kong and Macau. We assume all three are affected by the restrictions.
- ² Data sourced from the Australian Bureau of Statistics.
- ³ Includes some material sub-types that are not affected by the Chinese restrictions.
- ⁴ The most recent available national data set, taken from the [National Waste Report 2016](#). Comprises materials entering recycling processes.
- ⁵ The percentages are calculated using non-rounded numbers – may differ slightly from results if the rounded numbers presented in this graphic are used.
- ⁶ Large affected material sub-types include ferrous, copper and aluminium scrap.
- ⁷ Affected sub-types include unbleached kraft, newspapers and mixed paper and cardboard wastes.
- ⁸ The largest affected sub-types are ethylene polymers and mixed plastics wastes.
- ⁹ Mostly demolition materials, organic wastes and fly ash from coal-fired power stations.

Jurisdictions of origin

The wastes exported to China left from ports in the jurisdictions shown in Graphic 2. The fact that material was exported from a jurisdiction does not necessarily mean it was generated within that jurisdiction – it may have been transported from interstate.

Graphic 2 Australian 2016-17 exports of recyclables affected by the Chinese restrictions – by jurisdiction of origin (thousands of tonnes)

Recycled material type	NSW	NT	Qld	SA	Tas	Vic	WA
Metals ¹⁰	63	0.1	35	14	1.8	43	45
Paper & cardboard ¹¹	135	0.3	216	17	0.0	520	32
Plastics ¹²	43	0.0	7	4	0.5	66	4
All recycled materials	240	0.4	258	36	2.3	629	81
	19%	0.03%	21%	3%	0.2%	50%	7%



Notes:

10 Large affected material sub-types include ferrous, copper and aluminium scrap.

11 Affected sub-types include unbleached kraft, newspapers and mixed paper and cardboard wastes.

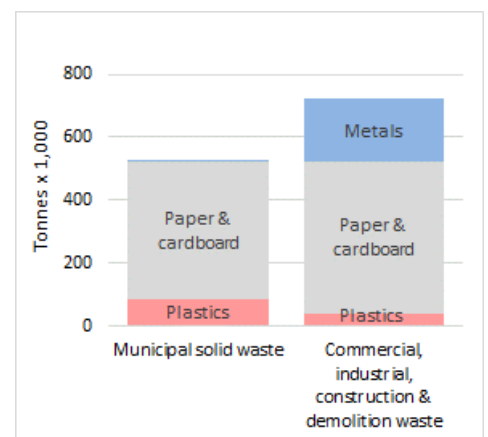
12 The largest affected sub-types are ethylene polymers and mixed plastics wastes.

Source streams

The wastes exported to China are estimated to have arisen within the source streams shown in Graphic 3.

Graphic 3 Australian 2016-17 exports of recyclables affected by the Chinese restrictions – by source stream, including the most significant material sub-components (thousands of tonnes)

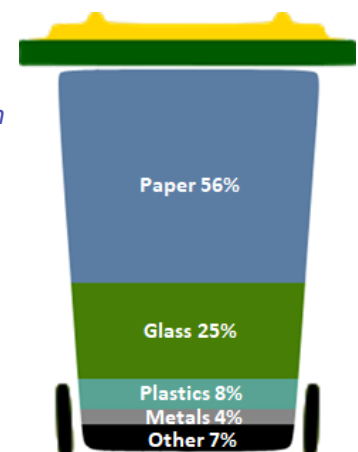
Recycled material type	Municipal	Commercial & industrial	Construction & demolition
Metals	1	202	
Paper & cardboard	440	478	2
(mixed paper & cardboard, export code 470790)	(262)	(14)	(0)
Plastics	85	40	0
(mixed plastics, export code 391590)	(72)	(13)	(0)
All these materials	526	722	



The municipal stream is mostly from household bin collections but also includes materials from street recycling bins, alternative waste treatment facilities and drop-off at recycling facilities. It is not possible to accurately identify these fractions but we estimate that household bin collections form more than 95% of the total. The average composition of household recycling bins is illustrated in Graphic 4.

The commercial and industrial stream includes material from business, industry and institutions.

*Graphic 4
Typical composition
of a domestic
recycling bin (by
weight)*



Graphic 5 compares the exports to China of recyclables from municipal sources with the overall quantities of these materials recycled from municipal sources.

Graphic 5 Australian 2016-17 exports of municipal recyclables affected by the Chinese restrictions compared with the overall quantities of municipal recyclables (thousands of tonnes)

Recycled material type	D) Quantity of these materials from municipal sources exported to China in 2016-17	E) Quantity of these materials recycled in 2014-15 from municipal sources ¹³	D) divided by E)
	(thousands of tonnes)	(thousands of tonnes)	
Paper & cardboard	440	906	49%
Plastics	85	204	42%
Metals and glass	1	1,707	0%
All these materials	526	2,816	19%

Note:

13 The most recent available national data set, taken from the [National Waste Report 2016](#). Comprises materials entering recycling processes.

Further Chinese waste import restrictions announced 19 April 2018

On 19 April 2018 China announced further restrictions across 32 waste types, taking effect from December 2018 and December 2019. The announcement clarified that certain sub-components of wastes that were included in the previous November 2017 announcement were banned outright from import, rather than being importable if contamination standards were met. In addition, the announcement may affect particular waste types (such as stainless steel scrap) or exports that are sometimes waste and sometimes used product (such as used and waste electrical and electronic equipment).