

Chapter 5

Key challenges and opportunities for Australia's recycling effort

5.1 Evidence received during this inquiry indicates that there are significant challenges facing the recycling industry, with a number of witnesses calling it a crisis. However, stakeholders recognised that some of these challenges might be a catalyst for change that would facilitate an improved recycling sector in Australia.

5.2 The challenges arise from a number of factors including the regulatory environment, changes in the international market for recyclable materials, a weak domestic market for recycled products, and a lack of investment in infrastructure.

5.3 A key issue that arose during this inquiry was the Chinese Government's decision to restrict imports of 24 types of solid waste, including various plastics and unsorted mixed papers, and the setting of more stringent standards for contamination levels. Up until this decision, the exportation of recycled waste to China has been a low-cost option upon which many developed countries have relied for managing recycling. The importation restrictions are necessitating all Australian governments and the recycling industry to reconsider existing approaches to how recycled waste is managed.

5.4 This chapter commences the report's discussion of the current state of Australia's recycling industry by examining the lack of end-markets for recyclable materials, market volatility, and the recent ban imposed by China on the importation of many types of recyclable waste. Opportunities to improve how recycled waste is managed are then discussed, with a key focus being evidence from stakeholders advocating the need to move from a 'linear economy' where raw materials are used to make a product that can be discarded, to a 'circular economy' based on recycling.

Overview of current economic conditions

5.5 Overall, there is a trend in Australians generating less municipal waste per person with a greater proportion of the waste being recycled.¹ Over the period 2006–07 to 2014–15, recycling (excluding fly ash) grew by 32 per cent. This growth rate of 1.6 per cent per year outstripped the average annual population growth of 1.5 per cent.² As noted by Lake Macquarie City Council, it appears that Australians are more likely to be enthusiastic recyclers than they are at seeking to avoid waste generation—

1 *Australian National Waste Report 2016*, p. vii.

2 *Australian National Waste Report 2016*, p. 11.

accordingly, the increasing amounts of material generated for recycling is placing the recycling industry under pressure.³

5.6 During this period of growth in recycling, practices in Australia's recycling sector have been influenced by a lack of domestic markets for recycled products, market volatility and the export of recycled waste.

5.7 Several submitters highlighted the lack of local demand for recyclable materials. They explained that this has contributed to poor economic conditions in the recycling industry and resulted in unsustainable practices, such as stockpiling and export to overseas markets. For example, the Hunter Joint Organisation of Councils, which represents ten councils in the Hunter/Central Coast Waste Region of New South Wales, submitted that in its region, there is 'limited reprocessing infrastructure...for dry recyclables, with two MRF [material recovery facilities] facilities taking materials from almost 1 million residents'. As the local and regional markets for recycled materials are 'relatively immature', it advised that 'a large proportion of dry recyclables are sent overseas for recycling'.⁴

5.8 Similarly, Maitland City Council submitted that the 'markets for most recyclables in Australia are unable to absorb the quantity of material collected'. As a result, unsustainable practices such as stockpiling and export to overseas markets are occurring.⁵ The NWRIC also submitted that it considers that the markets for glass, soft plastic and end of life tyres 'are under stress...or have failed'.⁶

5.9 The reliance on export to overseas markets, and in particular China, was raised in evidence. It was noted that China has in the past provided a stable market for Australian recyclable materials. Mr Tony Monaco, National Finance and Administration Manager, Visy Recycling, explained:

The growth of China as a market over the last 20 years has provided a large and steady outlet for the sale and re-use of recyclable commodities. Australian kerbside recyclers have, to a greater or lesser extent, relied on this outlet.⁷

5.10 Mr Tony Khoury, Executive Director, Waste Contractors and Recyclers Association of NSW (WCRA), also commented on the reliance on the Chinese market and lack of local markets. Mr Khoury stated that 'for a number of years, our members have expressed concern about both the reliance on exporting material to China that

3 Lake Macquarie City Council, *Submission 37*, p. 5.

4 Hunter Joint Organisation of Councils, *Submission 22*, p. 8.

5 Maitland City Council, *Submission 40*, p. 2.

6 National Waste and Recycling Industry Council, *Submission 10*, p. 3. The NWRIC explained that by market failure, it means materials are being landfilled or stockpiled.

7 Mr Tony Monaco, Visy Recycling, *Committee Hansard*, 20 November 2017, p. 26.

has high contamination levels and the fact that there have been no local markets for glass.⁸

5.11 This lack of local demand is largely influenced by cost considerations. For example, the South Australian Government highlighted the impact of commodity prices for imported materials (both virgin and recovered) relative to the prices for local recovered material on the domestic market for recycled product. It submitted that where imported products can be purchased more cheaply than products produced using locally recovered material, there is likely to be a detrimental impact on local businesses.⁹

5.12 Similarly, the financial viability of recycling depends on whether material recovery facilities (MRFs) can obtain a better price than the cost of landfill. Local Government NSW explained:

Kerbside recycling is processed at 48 material recovery facilities (MRFs) across NSW. At these facilities, co-mingled recycling is sorted into various products either to be processed on site or sent off site for processing or re-use. Some of the sorted recycled material can be sold, and in some cases the MRF will pay for another facility to process it. However, as long as the MRFs receive a better price than the cost of landfill it is still worthwhile for the MRF.¹⁰

5.13 Ms Gayle Sloan, Chief Executive Officer, Waste Management Association of Australia (WMAA), also argued that the lack of genuine progress of the national waste strategy in the last eight years has hampered the creation of secondary markets and a circular economy in Australia. If this had occurred, Australia 'would not have the continued reliance we have, to an extent, on global trading markets, such as China, for our commodities'.¹¹

5.14 It was emphasised that domestic markets for recycled products are required for recycling efforts to be sustainable.¹² Local Government NSW emphasised that 'real and productive domestic recycled product markets are desperately needed'.¹³ The Local Government Association of Tasmania similarly explained that 'long term viable markets for collected recycling is crucial to the success of recycling programs', and that the development of new markets would be required as recycling programs are

8 Mr Tony Khoury, WCRA, *Committee Hansard*, 14 March 2018, p. 23.

9 South Australian Government, *Submission 36*, p. 21.

10 Local Government NSW, *Submission 13*, p. 3.

11 Ms Gayle Sloan, Waste Management Association of Australia, *Committee Hansard*, 14 March 2018, p. 12. See also Councillor Linda Scott, Local Government NSW, *Committee Hansard*, 14 March 2018, p. 40; Mr Mark Venhoek, SUEZ Australia and New Zealand, *Committee Hansard*, 14 March 2018p. 49.

12 Mr Tony Kane, Visy Recycling, *Committee Hansard*, 20 November 2017, p. 30.

13 Local Government NSW, *Submission 13*, p. 4.

expanded.¹⁴ The WMAA and Re.Group advised that the current lack of sustainable markets might result in some recycling companies failing.¹⁵

5.15 Market volatility is also an issue. The Australian Capital Territory Government noted that recyclables are sold into global commodity markets and as such, recovered steel and aluminium are affected by the price of virgin material and recovered plastics are affected by the price of crude oil.¹⁶ Market developments can have significant implications for the financial viability and management of waste and recycling programs. The Hunter Joint Organisation of Councils explained:

The eventual end markets and corresponding commodity prices for materials dictate whether it is practical and viable to collect the materials for recycling or to landfill them. A recent example relates to the drop in commodity prices for ferrous scrap metals. Although these prices are now on the rise again, councils in the region had to make strategic decisions as to whether to continue to collect metals for recycling or to landfill them.¹⁷

5.16 The Adelaide Hills Region Waste Management Authority also noted that councils have struggled to recycle scrap metal in a cost effective manner since scrap metal pricing has fallen.¹⁸

5.17 Mr Tony Monaco, Visy Recycling, also commented on market volatility and noted that there has been an 'overall decline in the commercial viability of recycling and recyclable feedstock markets globally'. However, with China banning the importation of certain recyclable plastic grades and mixed paper from January 2018, the market is now changing rapidly. Mr Monaco concluded, 'export-facing commodity sales are exposed to unavoidable volatility and financial risk'.¹⁹

Changes to China's import policies

5.18 Existing challenges with lack of domestic markets have been exacerbated by recent developments affecting the export of recycled waste.

14 Local Government Association of Tasmania, *Submission 19*, p. 5.

15 Waste Management Association of Australia, *Submission 52*, pp. 10–11; Re.Group, *Submission 32*, p. 10.

16 Australian Capital Territory Government, *Submission 20*, p. 6.

17 Hunter Joint Organisation of Councils, *Submission 22*, p. 9.

18 Adelaide Hills Region Waste Management Authority, *Submission 33*, p. 4.

19 Mr Tony Monaco, Visy Recycling, *Committee Hansard*, 20 November 2017, p. 26. See also, Mr Andrew Doig, Australian Sustainable Business Group, *Committee Hansard*, 14 March 2018, p. 63.

5.19 As noted in Chapter 2, Australia exports recyclable material to over 100 countries with 4.23 mega tonnes of recycled materials exported in 2016–17.²⁰ China has been a major destination for Australia's recycled waste, with around 1.3 million tonnes exported in 2016–17. This accounted for 4 per cent of Australia's total recyclable waste, but included significant amounts of recyclable plastics and recyclable paper (35 per cent and 30 per cent of Australia's totals).²¹

5.20 Over the last four years, China has implemented a series of strategies to restrict the importation of certain types of recycled material. The aim of these restrictions is to combat smuggling and illegal activities in relation to the importation of recyclable and waste material into China, as well as supporting the development of China's domestic recovery industry. Of particular concern to the Chinese Government has been the adverse impacts of imported contaminated waste on China's environment, and health of its population.²²

5.21 China implemented Operation Green Fence in February 2013. Green Fence sought to enforce existing regulations limiting the amount of non-recyclable material in imported bales particularly mixed paper and mixed rigid plastics scrap. Substandard imports were shipped back to the exporter at the exporters' expense.²³ In February 2017, China announced Operation National Sword. In relation to imported recyclates, National Sword sought to tighten rules for compliance with waste import regulations, including higher penalties for smugglers.²⁴

5.22 In July 2017, China notified the World Trade Organisation (WTO) that it planned to restrict imports of 24 types of solid waste, including various plastics and unsorted mixed papers. An updated notification in November 2017 outlined China's intention of adopting a 0.5 per cent contamination limit on waste imports for the previously announced 24 categories.²⁵ The new contamination thresholds came into force in January 2018.

20 Blue Environment, 'Data on exports of recyclables from Australia to China', 19 March 2018 <https://blueenvironment.com.au/wp-content/uploads/2018/03/Data-on-exports-of-recyclables-from-Australia-to-China.pdf> (accessed 8 May 2018).

21 Meeting of Environment Ministers Agreed Statement, 27 April 2018, p. 1.

22 Mr Nicholas Harford, Equilibrium, *Committee Hansard*, 20 November 2017, p. 17; Mr Jeffrey Angel, Total Environment Centre/Boomerang Alliance, *Committee Hansard*, 14 March 2018, p. 57; Mr Tony Kane, Visy Recycling, *Committee Hansard*, 20 November 2017, pp. 28–29.

23 Jerry Powell, 'Operation Green Fence is deeply affecting export markets', *Resource Recycling*, 12 April 2013, <https://resource-recycling.com/recycling/2013/04/12/operation-green-fence-is-deeply-affecting-export-markets/> (accessed 5 May 2018).

24 Jared Paben, 'China announces 'Sword' crackdown on illegal recyclable material imports', *Resource Recycling*, 21 February 2017, <https://resource-recycling.com/recycling/2017/02/21/china-announces-sword-crackdown-illegal-recyclable-material-imports/> (accessed 5 May 2018).

25 Mr Mike Ritchie - Presentation, 'China's National Sword policy', received 19 March 2018, p. 5.

5.23 More recently, China launched the new customs inspection program *Blue Sky 2018* to replace the National Sword initiative, further concentrating on the 24 categories of solid waste added to the list of restricted imports in 2017, including plastics waste, unsorted waste paper and waste textile materials with a contaminant level of more than 0.5 per cent. Blue Sky will operate to December 2018.²⁶

An industry in crisis—the effects on the recycling sector in Australia

5.24 The consequences of China's waste import policies have been felt in Australia with witnesses describing the recycling industry as being in crisis. Mr Mark Venhoek, Suez, stated:

Their—virtual—import ban on recyclables is an issue that has sent the industry into, what I would call, indeed, a crisis mode and is a clear example of imperfections within our industry. Although the issue is not just an Australian one—it's a global problem—it needs to be dealt with at a national level.²⁷

5.25 The two main affects identified in evidence are the impact of the reduction in international prices for certain recyclable products and the consequent flow on effects for the local recycling businesses and collection services, and the increasing cost of processing material to meet Chinese regulatory requirements.

5.26 Witnesses also emphasised the need for urgent action noting that the 'crisis is happening now' and that Australia doesn't 'have three years to run through a COAG process to come to a solution' to the issue.²⁸ Councillor Linda Scott, President, Local Government New South Wales, told the committee that 'governments and industry, including recyclers, collectors, manufacturers and the community need to work together to develop solutions to the current recycling crisis'.²⁹

5.27 Ms Sloan, WMAA, was more cautious in describing the current operating environment but nevertheless called for action. Ms Sloan stated that 'it's a challenging time which creates opportunity but, if we don't act, it may become a crisis'.³⁰

26 'China launches Blue Sky 2018 to replace National Sword', *Waste Management Review*, 13 March 2018, <http://wastemanagementreview.com.au/china-launches-blue-sky-2018-replace-national-sword/> (accessed 10 May 2018).

27 Mr Mark Venhoek, SUEZ Australia and New Zealand, *Committee Hansard*, 14 March 2018, p. 49.

28 Mr Gregor Riese, GCS Consulting, *Committee Hansard*, 14 March 2018, p. 6.

29 Councillor Linda Scott, Local Government New South Wales, *Committee Hansard*, 14 March 2018, p. 40.

30 Ms Gayle Sloan, WMAA, *Committee Hansard*, 14 March 2018, p. 13.

Commodity prices and export opportunities

5.28 Exports to China must meet stringent contamination levels and as a consequence, the international market is facing a glut of certain material with a resultant reduction in prices. Mr Monaco addressed this issue and stated:

Coupled with increasing rates of recycling, globally and now within China itself, this will most likely see a glut of recyclable materials with no home, and prices will likely plummet due to supply-and-demand dynamics. Thus, existing commercial arrangements will no longer be financially sustainable.³¹

5.29 Mr Tony Kane, Visy Recycling, similarly observed that the reverberations of the bans are being felt in the industry internationally. He provided the example of the significant quantities of fibre exported for recycling from the United States and Europe—28 million tonnes—of which approximately six million is mixed paper. The mixed paper now has no market in China and 'is going to have to find a home somewhere else in Asia'.³²

5.30 Countries still accepting imports include Malaysia and Vietnam, albeit at much lower prices. The South Australian Government commented that, in relation to recycled plastics, exporters need to 'compete in a "shrinking" global market for other export destinations'. However, these countries are now buying the same material for less.³³

5.31 MRA Consulting provided an analysis of the impacts on commodity prices in a report commissioned by the Australian Council of Recycling. The report stated that the prices paid for Australia's recovered recyclables have crashed.³⁴ Mr Mike Richie, Director, MRA Consulting Group, commented that the price of mixed paper 'dropped from its decade-long range of \$200–250/tonne to between \$0–80/tonne' and 'mixed plastic has dropped from \$250–350/tonne (\$400–450 for sorted PET and HDPE) to around \$50/tonne'.³⁵

5.32 The reduction in prices is being felt by recyclers in Australia. The Australian Sustainable Business Group (ASBG) commented:

While some recyclers will welcome a drop in their inputs, those collecting recycle for export will find major problems with their business model.

31 Mr Tony Monaco, Visy Recycling, *Committee Hansard*, 20 November 2017, p. 26.

32 Mr Tony Kane, Visy Recycling, *Committee Hansard*, 20 November 2017, p. 29.

33 South Australian Government, *Submission 36*, p. 21.

34 MRA Consulting Group, *China National Sword: The role of Federal Government*, April 2108, p. 2.

35 Mr Mike Ritchie, 'China's National Sword is cutting deep in the recycling sector', received 19 March 2018, p. 17.

These bans will likely lead to stockpiling, increased flows to landfills and potentially illegal dumping activities.³⁶

5.33 The South Australian Government also provided evidence on the impacts on plastics recyclers in that state. Recycled plastics were described as being particularly vulnerable with export operators needing to charge operating fees to cover handling and export (shipping) costs. Following the fall in prices 'some plastics recyclers are struggling to compete with landfill disposal operators to receive the material. Due to these circumstances and plastics' lightweight nature, some plastics can currently be disposed to landfill at a cheaper rate than directing the material to a plastics recycler'.³⁷

5.34 It was noted that exporters could seek to reduce the contaminant level of their materials to meet Chinese import standards. However, to do so will be require MRFs to ensure that materials are sorted, separated and washed prior to export to China.³⁸

5.35 The South Australian Government submitted that it will be difficult to meet the standards with existing materials-recovery processes or without incurring higher costs.³⁹ Infrastructure, such as optical, high-tier technology is available but requires investment and increased manual processing is costly. Mr Stuart Garbutt, Re.Group, commented that 'pre this ban probably 30 to 40 per cent of our operating costs were labour whereas now 50 to 60 per cent of our operating costs are labour'. However, Mr Garbutt went on to state that this is not sustainable in the current market.⁴⁰

5.36 In the face of a limited local market for recycled materials, exporters could seek other overseas markets. As noted above, while these markets exist, the prices being received for commodities have fallen. In addition, witnesses commented on concerns with industry standards in some countries. For example, Mr Robert Kelman, Executive Officer, Australian Tyre Recyclers Association, commented on the export of whole baled tyres to countries using dirty pyrolysis operations.⁴¹ Similarly, Mr Peter Shmigel, Chief Executive Officer, Australian Council of Recycling, stated that materials will be exported to landfill in other markets, which is not desirable,

36 Australian Sustainable Business Group, *Submission 41*, p. 10.

37 South Australian Government, *Submission 36*, p. 21.

38 Mr Nicholas Harford, Equilibrium, *Committee Hansard*, 20 November 2017, p. 16.

39 Mr Vaughan Levitzke, Green Industries SA, *Proof Committee Hansard*, 30 April 2018, p. 33.

40 Mr Stuart Garbutt, Re.Group, *Proof Committee Hansard*, 30 April 2018, p. 2. See also, Lake Macquarie City Council, *Submission 37*, p. 5; Mr Harry Wilson, WCRA, *Committee Hansard*, 14 March 2018, p. 29.

41 Mr Robert Kelman, Australian Tyre Recyclers Association, *Committee Hansard*, 14 March 2018, p. 56.

'particularly when those landfills are not designed to the same standards as ours, are not regulated in any particular way and have people living on them'.⁴²

5.37 Mr Terry Van Iersel, Manager, Sales and Commodity Trading, SKM Recycling, also commented that changes in China are 'just another step in what's been happening for some time' and argued that 'it may even get tighter in China. But certainly, over time, it will happen in other countries as well'.⁴³

Kerbside recycling sector

5.38 The impacts of the Chinese ban on importation of material are particularly apparent in the kerbside recycling industry. Mr Tony Kane, Visy Recycling, noted that most operators in the kerbside recycling industry have a heavy reliance on exporting a large proportion of recyclable materials recovered from kerbside recycling.⁴⁴ Mr Harford, Equilibrium, similarly commented that:

Previously, a material recovery facility in Australia could largely have taken the material from kerbside recycling and exported the mixed plastics load either directly to China or through another brokerage into China.⁴⁵

5.39 However, Mr Kane commented that the contamination level in kerbside recycled material is higher than allowed under the new restrictions.⁴⁶ Given the lack of alternative markets, falling prices and increasing costs to reduce the level of contamination, and the lack of domestic markets, evidence indicated that the kerbside recycling is facing significant difficulties.

5.40 The Local Government Association of Queensland (LGAQ) provided the committee with a range of outcomes from the loss of offshore markets combined with the absence of local markets. These include financial impacts on existing council kerbside recycling services that are already marginal or cost negative; consideration of gate fee increases; stockpiling and/or landfilling of recyclate over the short-to-medium term; and erosion of community confidence in kerbside recycling schemes when landfilling of recyclate becomes more widespread. The LGAQ added that in Queensland, councils are concerned that the viability of kerbside recycling services is being threatened.⁴⁷

42 Mr Peter Shmigel, Australian Council of Recycling, *Proof Committee Hansard*, 30 April 2018, p. 30.

43 Mr Terry Van Iersel, SKM Recycling, *Committee Hansard*, 20 November 2017, p. 37.

44 Mr Tony Kane, Visy Recycling, *Committee Hansard*, 20 November 2017, p. 26.

45 Mr Nicholas Harford, *Committee Hansard*, 20 November 2017, p. 16.

46 Mr Tony Kane, Visy Recycling, *Committee Hansard*, 20 November 2017, p. 29.

47 Mr Luke Hannan, Local Government Association of Queensland, *Proof Committee Hansard*, 30 April 2018, p. 9.

5.41 Queensland councils were also anticipating losses of revenue—\$7 million in the 2018–19 financial year. The LGAQ stated that it believed that the total cost could be as high as \$50 million per annum in Queensland once all of the effects are fully known.⁴⁸

5.42 Similarly, other local government organisations noted that the ban will have significant impacts on the ability of MRF operators to market sorted recyclables. As a consequence, stockpiling, a reduction in the type of materials acceptable in household recycling streams and more materials ending up in landfill were seen as the likely outcomes.⁴⁹

5.43 Witnesses also commented that waste collection operators are seeking changes to contractual arrangements with local councils. Mr Adrian Beresford-Wylie, Chief Executive, Australian Local Government Association (ALGA) stated that 'there clearly is concern and uncertainty from councils across the nation about the likelihood of collectors and material recovery facilities refusing service' and in some cases 'recycling contractors either have already begun to negotiate or are seeking to renegotiate fees with councils'.⁵⁰ The South Australian Government similarly stated:

Local government organisations are continuing to meet their kerbside collection obligations, but all of the material recovery facilities that receive and process South Australia's kerbside recyclables are experiencing considerable cost pressures due to current market conditions and are seeking to renegotiate contractual arrangements with their councils.⁵¹

5.44 One council which decided to send its recyclable materials to landfill was Ipswich City Council, Queensland. The Council noted that its decision in April 2018 was the direct result of its failure to reach an agreement with the successful tenderer for its collection services. It argued that being 'in the market in a tender process at the point in time China's Sword policy occurred' was a primary factor in this outcome.⁵²

48 Mr Luke Hannan, Local Government Association of Queensland, *Proof Committee Hansard*, 30 April 2018, p. 9. See also Mr Robert Ferguson, Local Government Association, *Proof Committee Hansard*, 30 April 2018, p. 10.

49 Northern Adelaide Waste Management Authority, *Submission 39*, p. 3. See also Mr Harry Wilson, Waste Contractors and Recyclers Association of New South Wales, *Committee Hansard*, 14 March 2018, p. 26.

50 Mr Adrian Beresford-Wylie, Australian Local Government Association, *Committee Hansard*, 21 March 2018, p. 12.

51 Mr Vaughan Levitzke, Green Industries SA, *Proof Committee Hansard*, 30 April 2018, p. 33.

52 Councillor Andrew Antonioli, Ipswich City Council, *Proof Committee Hansard*, 30 April 2018, pp. 17 and 21. See also Mr Luke Hannan, Manager, Planning, Development and Environment, Local Government Association, *Proof Committee Hansard*, 30 April 2018, p. 10.

5.45 Councillor Linda Scott, President, Local Government NSW, added that these pending contract negotiations, have the potential to have significant financial implications for councils.⁵³

5.46 The committee heard evidence that not all kerbside services are under pressure. The Australian Capital Territory Government, for example, indicated that the effect of the bans on its services were 'very manageable' as kerbside collection in the Australian Capital Territory represents 3.5 per cent of the total waste in the territory.⁵⁴ There have also been few effects in the Northern Territory. The City of Brisbane also commented that very little of its recyclables are sent offshore: its recycling contractor, Visy, currently has beneficial markets in Australia for over 80 per cent of its recyclable materials; glass is sent to local processors; and, glass fines are used in the Brisbane's asphalt production.⁵⁵

5.47 However, the committee heard that as a result of the ban, some councils are in a 'crisis situation'.⁵⁶ The LGAQ also stated that the impacts are being felt more in regional and coastal areas.⁵⁷

5.48 Submitters noted that another significant impact of China's policy change has been the management of increasing stockpiles of recyclable materials. Mr Robert Ferguson, Senior Advisor, Environmental and Public Health, LGAQ, commented that councils are concerned with the unprecedented stockpiling that they are currently undertaken. Mr Ferguson noted that a number of councils do not have a lot of capacity to stockpile.⁵⁸ Stockpiling also represents an environmental hazard and significantly increases the risk of fires.⁵⁹

5.49 State Governments have responded to the emerging situation with funding for short-term support: Victoria provided \$13 million, and New South Wales provided \$47 million.

53 Councillor Linda Scott, Local Government NSW, *Committee Hansard*, 14 March 2018, p. 42.

54 Mr Jim Corrigan, Transport Canberra and City Services Directorate, *Committee Hansard*, 21 May 2018, p. 12.

55 Mr Arron Lee, Brisbane City Council, *Proof Committee Hansard*, 30 April 2018, p. 8.

56 Mr John Pritchard, Australian Local Government Association, *Committee Hansard*, 21 March 2018, p. 13.

57 Mr Robert Ferguson, Local Government Association of Queensland, *Proof Committee Hansard*, 30 April 2018, p. 11; Mr Luke Hannan, Local Government Association of Queensland, *Proof Committee Hansard*, 30 April 2018, p. 14.

58 Mr Robert Ferguson, Local Government Association of Queensland, *Proof Committee Hansard*, 30 April 2018, p. 11.

59 Visy, *Submission 43*, p. 8.

Australian Government response

5.50 The Department of the Environment and Energy (the department) provided the committee with an overview of the work undertaken following the announcement of the changes to China's import policies. Mr Bruce Edwards, the department, commented that discussions had taken place with the Department of Foreign Affairs and Trade (DFAT). The department also undertook discussions with the Department of Industry, Innovation and Science and Austrade to explore the potential for Australia to access different markets for recycled material.⁶⁰

5.51 The Australian Government also undertook a number of 'diplomatic interactions between Australian officials and Chinese officials' to clarify the when the bans would take effect and the nature and extent of them. The department also met with European counterparts.⁶¹

5.52 In addition, the department sought advice from state and territory governments on the impact of the bans. This process was described by the department as one of 'discovery' which recognised that effects were different for each state and territory and also between local government jurisdictions. Mr Edwards also noted that the states and territories had sought advice from industry stakeholders.⁶²

5.53 In March 2018, the department conducted a workshop with stakeholders to discuss a range of issues including whether the domestic market for recyclables has the capacity to manage the material unable to be exported to China.⁶³

5.54 The situation in the waste management sector was considered at the Meeting of Environment Ministers on 27 April 2018. Following the meeting, the environment ministers released an agreed statement on the need to 'set a sustainable path for Australia's waste' following import restrictions announced by China. Ministers agreed to a number of commitments, which are outlined below:

- A commitment to reduce the amount of waste generated and to make it easier for products to be recycled. Ministers endorsed a target of 100 per cent of Australian packaging being recyclable, compostable or reusable by 2025 or earlier. Governments would work with the Australian Packaging Covenant Organisation to deliver this target.

60 Mr James Tregurtha, Department of the Environment and Energy, *Proof Committee Hansard*, 21 March 2018, p. 5.

61 Mr Bruce Edwards, Department of the Environment, *Proof Committee Hansard*, 21 March 2018, p. 2.

62 Mr Bruce Edwards, Department of the Environment and Energy, *Proof Committee Hansard*, 21 March 2018, p. 4.

63 Mr James Tregurtha, Department of the Environment and Energy, *Proof Committee Hansard*, 21 March 2018, p. 5.

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- Encourage waste reduction strategies through greater consumer awareness, education and industry leadership.
 - Increase Australia's recycling capacity by developing increased domestic capabilities.
 - Increase the demand for recycled products. Ministers agreed to advocate for increased use of recycled materials in the goods procured by government, and to collaborate on creating new markets for recycled materials.
 - Explore opportunities to develop waste-to-energy and waste-to-biofuels projects, whilst recognising the reduction, reuse and recycling of waste as a priority. This will occur with the support of the Clean Energy Finance Corporation and the Australian Renewable Energy Agency.
 - Update the 2009 Waste Strategy to include circular economy principles.⁶⁴

5.55 The Ministers also agreed to a number of other measures including:

- fast-tracking the development of new product stewardship schemes for photovoltaic solar panels and batteries;
- making a commitment to halving Australia's food waste by 2050 through the alignment of community education efforts and encouragement of the composting of residual food waste; and
- making a commitment to complete the voluntary phase out of microbeads initiated in 2016. Currently 94 per cent of cosmetic and personal care products are microbead free and Ministers committed to eliminating the final 6 per cent, and examining options to expand the phase out to other products.⁶⁵

5.56 Further discussions were foreshadowed with ministers agreeing to re-convene by teleconference in mid-June 2018 to discuss progress on recycling, and to meet in late 2018 to 'further progress delivery of the commitments' made in the 27 April 2018 agreement.⁶⁶

Opportunities

5.57 The recent changes in the international market provide an opportunity for industry and government to improve the way recycled material is managed in Australia. Witnesses advocated for investment in infrastructure and technologies, and the development of a circular economy with sustainable domestic markets. Mr Van Iersel, SKM Recycling told the committee:

64 Seventh Meeting of Environment Ministers, Agreed Statement, 27 April 2018, Melbourne, <http://www.environment.gov.au/about-us/mem>.

65 Seventh Meeting of Environment Ministers, Agreed Statement, 27 April 2018, Melbourne, <http://www.environment.gov.au/about-us/mem>.

66 Seventh Meeting of Environment Ministers, Agreed Statement, 27 April 2018, Melbourne, <http://www.environment.gov.au/about-us/mem>.

Recent regulatory changes in China do pose some challenges but we believe this represents a major opportunity for our business and the industry, more broadly.⁶⁷

5.58 Similarly, Mr Venhoek, SUEZ, told the committee that the changes bring:

...significant opportunities to stimulate the domestic market on the reuse of recyclables and to create jobs in both recycling and manufacturing, which will, in turn, bring economic benefits to the Australian economy and make us, once again, less dependent on having other countries treating our waste.⁶⁸

5.59 It was argued that the regulatory changes in China are simply 'another step in what's been happening for some time' and that similar regulation is likely to be seen in other countries such as Vietnam and Thailand in the future.⁶⁹ As such, the industry must respond by investing in the 'areas of infrastructure, improvement and innovation'. This includes investment to improve sorting and reprocessing infrastructure to meet international regulatory requirements and to better supply domestic markets.⁷⁰

Domestic market and circular economy

5.60 In response to the lack of domestic markets for recycled content and the crisis caused by China's National Sword policy, multiple submitters argued that recycling in Australia needs to transition away from being export-focused to an industry that supports waste being processed and reused to make new products domestically.

5.61 Submitters stated that the most effective way to transition away from an export-focused industry was by the establishment of a circular economy in Australia. A circular economy is an alternative model to the traditional linear economy which is based on 'take, make, use and dispose'. It is a self-sustaining system founded on the principle of keeping material resources in use, or 'circulating' for as long as possible. It is designed to extract the maximum value from resources while in use, then recover and regenerate products and materials.⁷¹

5.62 Mr Max Spedding, Chief Executive Officer, National Waste and Recycling Council (NWRIC), noted the current rate of growth in waste production and stated:

If waste continues to grow at 4½ per cent per annum, which is currently what it's doing, and rises from the current 55 million tonnes, by 2040

67 Mr Terry Van Iersel, SKM Recycling, *Committee Hansard*, 20 November 2017, p. 37.

68 Mr Mark Venhoek, SUEZ Australia and New Zealand, *Committee Hansard*, 14 March 2018. See also Mr Jim Corrigan, ACT Government, *Proof Committee Hansard*, 21 March 2018, p. 11; Mr Kane, Visy Recycling, *Committee Hansard*, 20 November 2017, p. 29.

69 Mr Terry Van Iersel, SKM Recycling, *Committee Hansard*, 20 November 2017, p. 37.

70 Mr Peter Shmigel, Australian Council of Recycling, *Proof Committee Hansard*, 30 April 2018, p. 25.

71 Southern Metropolitan Regional Council, *Submission 59*, p. 1.

Australians will generate 138 million tonnes of solid waste. Assuming that recycling, the national diversion, continues at 75 per cent, our recycling capacity we will need to increase by 400 per cent by 2040, which is an enormous amount.⁷²

5.63 Mr Spedding, NWRIC, argued that this situation can only be remedied through the alignment of 'waste management planning, regulations and procurement practices to quickly transition the sector to a circular economy'. Mr Spedding noted that a circular economy would focus waste management on the recovery of materials rather than landfill and that 'an early transition to a sustainable circular economy is required to meet the challenges of increased waste volumes'.⁷³

5.64 The committee heard that circular economies are implemented in other jurisdictions, and that there are both environmental and economic benefits of transitioning to such a system. Ms Sloan, WMAA, told the committee that:

I submit that Australia's being left behind the rest of the developed world in transitioning to the circular economy and using waste commodities as a resource, with the effective closure of China as a market for Australia's commodities, it's vital that the Australian government works with industries to create a circular economy in Australia and develop onshore local manufacturing. The added benefit beyond the environmental good of moving to a circular economy is increased job creation. Studies have found repeatedly that, for every one job involved in landfill and 10,000 tonnes of waste, over four are created by resource recovery.⁷⁴

5.65 A number of suggestions were made to encourage domestic markets including mandating the use of recycled product in manufacturing, and the provision of government funding. For example, Mr Spedding, NWRIC, suggested that landfill levies could be used to stimulate the creation of domestic markets for recycled material. As noted in Chapter 4, Mr Spedding also suggested that landfill levies should be used to provide low-interest loans to the recycling industry, modelled on the Clean Energy Finance Corporation's approach.⁷⁵ In addition, the NWRIC supported the use of the Emissions Reduction Fund (ERF) to support greenhouse gas reduction initiatives, land for gas recycling and material efficiency.⁷⁶

5.66 Mr Mark Venhoek, SUEZ Australia and New Zealand advocated for the Australian Government to mandate the use of recycled material in producing new products. Mr Venhoek stated that currently, the manufacturing industry is hesitant to

72 Mr Max Spedding, NWRIC, *Committee Hansard*, 20 November 2017, p. 1.

73 Mr Max Spedding, NWRIC, *Committee Hansard*, 20 November 2017, pp. 1–2.

74 Ms Gayle Sloan, WMAA, *Committee Hansard*, 14 March 2018, p. 12.

75 Mr Max Spedding, NWRIC, *Committee Hansard*, 20 November 2017, p. 8.

76 Mr Max Spedding, NWRIC, *Committee Hansard*, 20 November 2017, p. 1.

invest in the use of recycled material but that if it became mandatory then 'those investments will automatically come'.⁷⁷

5.67 Mr Venhoek told the committee that in other countries, government policy has required that infrastructure be created to support the pre-treatment, treatment and re-manufacture of recycled material. Mr Venhoek explained:

In Germany, for instance, there is a semi-government organisation that developed the dual system, or the green dot system. While they were tendering for the collection and processing of all materials, they said: 'Everything needs to be processed within our country boundaries. We are not there to have any kind of materials leaving our country and being treated in India or in China or anywhere else in the world.'⁷⁸

5.68 Mr Venhoek noted that as a result, Germany's dependency on exporting recyclates outside of Germany has now dropped to almost zero.⁷⁹

Invest in infrastructure and new technologies

5.69 It was argued that investment in the infrastructure required to deliver high quality recyclable products will ensure access to international markets.⁸⁰ Further, investment in infrastructure is required to develop Australia's domestic markets.⁸¹

5.70 For example, Mr Van Iersel highlighted that SKM Recycling has invested heavily in order to produce higher grade recyclable material and therefore has a strong and ongoing market for its products. Mr Van Iersel stated 'those who invest in the infrastructure needed to deliver higher quality recyclable products should have little difficulty in being able to access a strong market'.⁸²

5.71 Mr Shmigel, Australian Council of Recycling, told the committee that investment in infrastructure is 'valuable', particularly in relation sorting and reprocessing. Mr Shmigel noted that Australia has a mature reprocessing capacity for paper, fibre, and metals.⁸³ However, Mr Stuart Garbutt, Re.Group, observed that a lot of older MRFs are producing mixed paper. Internationally, MRFs are designed to take

77 Mr Mark Venhoek, SUEZ Australia and New Zealand, *Committee Hansard*, 14 March 2018, p. 54.

78 Mr Mark Venhoek, SUEZ Australia and New Zealand, *Committee Hansard*, 14 March 2018, pp. 54–55.

79 Mr Mark Venhoek, SUEZ Australia and New Zealand, *Committee Hansard*, 14 March 2018, p. 55.

80 Mr Terry Van Iersel, SKM Recycling, *Committee Hansard*, 20 November 2017, p. 37.

81 Mr John Pritchard, Australian Local Government Association, *Committee Hansard*, 21 March 2018, p. 14.

82 Mr Terry Van Iersel, SKM Recycling, *Committee Hansard*, 20 November 2017, p. 37.

83 Mr Peter Shmigel, Australian Council of Recycling, *Proof Committee Hansard*, 30 April 2018, p. 25.

one individual component of mixed paper. Investment is needed to enable Australian MRFs to separate the components—newspaper, magazines and pamphlets and cardboard. Mr Garbutt concluded that this investment will value add and ensure sustainability. Similarly, rather than producing general mixed plastic, four to five main plastic groups could be separated.⁸⁴

5.72 The level of investment required to develop new facilities is however, significant. Mr Garbutt stated that:

A brand-new 10,000 to 15,000 tonne MRF is \$5 million to \$6 million; the 100,000 to 200,000 tonne MRFs are \$25 million to \$30 million. I believe the one in Melbourne is reported to be somewhere in the vicinity of \$40 million to \$50 million. I would dare say that these newer MRFs probably don't need as much capital as some of these older regional MRFs. You would be probably looking at packages of \$1 million to \$2 million in regional areas, \$3 million to \$5 million in the cities.⁸⁵

5.73 Mr Garbutt, Re.Group also noted that unless the industry can ensure a financial return, investment in upgrading infrastructure will not occur. Mr Garbutt stated:

Fundamentally, no-one is going to spend money in this industry unless we can get a return on that capital. If that material is going to be exiting the stream then it doesn't seem to make commercial sense to invest in it to try and recover it.⁸⁶

5.74 It was suggested that government assistance should be provided to industry operators to support the upgrading of infrastructure to ensure the delivery of recyclable products that meet market expectations. Mr Van Iersel, SKM Recycling, stated:

We suggest that further investigation is needed into which types of recyclable material some operators are finding it difficult to sell, and the extent to which that issue may be related to their processing methods and the quality of their end product, rather than broader trends in commodity prices.⁸⁷

5.75 The need for investment in innovative technological solutions to deal with waste and recycling was also raised by a number of submitters. For example, Mr Max Spedding, NWRIC, told the committee that there is a need to plan and invest in recycling in Australia. Mr Spedding highlighted the work being undertaken in Victoria to process soft plastics. Mr Spedding stated:

84 Mr Stuart Garbutt, Re.Group, *Proof Committee Hansard*, 30 April 2018, p. 3.

85 Mr Stuart Garbutt, Re.Group, *Proof Committee Hansard*, 30 April 2018, p. 4.

86 Mr Stuart Garbutt, Re.Group, *Proof Committee Hansard*, 30 April 2018, p. 3.

87 Mr Terry Van Iersel, SKM Recycling, *Committee Hansard*, 20 November 2017, p. 35.

There is a small company in Geelong called GT Recycling that got a grant from Sustainability Victoria. They got a further grant from the Packaging Covenant's council, and they had Deakin University do some genuine R&D. They've now got a facility in Geelong processing 1,500 types of soft plastics and producing a pallet. They're value-adding to this waste product, and that pallet is now being used for agricultural plastic manufacturing in Australia. Here's a situation where you've got a problem product on the market, which is soft plastics. If you were sending it to China, you would have to be worried that it's not going to go to China in the future. Here's a local solution: with a bit of R&D and some grant funding, they've now got a facility and I think they're employing 15 people.⁸⁸

5.76 Mr Spedding, NWRIC, also suggested that collected landfill levies should be used to support sustainable recycling initiatives through low-interest loans being made available to industry for the development of 'value-added' businesses.⁸⁹

5.77 The University of New South Wales (UNSW) submitted that the Australian Government should move beyond the current approach of 'reducing, re-using and recycling' and 'embrace the concept of "reforming" waste to create new products and valuable resources'. It highlighted the work of the UNSW Centre for Sustainable Materials Research and Technology (SMaRT) which has developed world-leading microfactory technology to transform different types of waste into reformed products with commercial returns. This includes:

- dirty glass into engineered stone products;
- e-waste into valuable alloys and metals and 3D filament;
- fabrics into construction industry materials;
- wood into new wood products;
- coffee capsules, tyres and other types of waste into carbon for the use in the steel industry; and
- waste fishing nets into glasses frames.⁹⁰

5.78 UNSW submitted that microfactory technologies provide a range of benefits including requiring a less intensive level of recycling sorting, and the ability to process a wide range of mixed and complex wastes. It also described microfactories as 'economic game-changers' providing new employment opportunities, revitalising Australia's manufacturing sector, and creating new export opportunities for products created through microfactory technology.⁹¹

88 Mr Max Spedding, NWRIC, *Committee Hansard*, 20 November 2017, p. 8. For other examples, see Ms Gayle Sloan, WMAA, *Committee Hansard*, 14 March 2018, p. 18; Mr Stuart Garbutt, Re.Group, *Proof Committee Hansard*, 30 April 2018, p. 4.

89 Mr Max Spedding, NWRIC, *Committee Hansard*, 20 November 2017, p. 8.

90 University of New South Wales, *Submission 62*, p. 1.

91 University of New South Wales, *Submission 62*, pp. 1–2.