



Finding treasure in our trash

The \$324 million wasted opportunity
sitting on our kerbs

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Building a better
working world



Restoring faith in recycling

Australia will have to manage its waste onshore and has no consistent or robust infrastructure to do so. We need to restore faith in recycling by encouraging transparency in the process in order to shift consumer's perception of what they put in their bins.

Instead of 'waste' we need them to see a tradable asset, a commodity with a market value. The first step in changing consumers behaviour is restoring their belief that what they are putting in the recycling bin is actually being recycled.

It's not waste,
...it's a resource

As part of EY's commitment to building a better working world, we have examined the issue of household recycling and the domestic opportunity at hand if we can change our behaviours.

This report focuses on material collected from households for recycling through regular kerbside collections. This material is typically in the form of packaging containers, bottles and paper.

Within this report, EY estimates Australia could be missing out on up to \$324 million of value that could be extracted from the waste in our kerbside bins each year.

This opportunity will only be realised if households take a more diligent approach to sorting, councils assist through education and infrastructure and by a greater focus on waste as a resource, like we do with mined resources such as iron ore or even gold.

The recent announcement from the Council of Australian Governments (COAG) to ban the export of recyclable waste makes the opportunity not only compelling, but also necessary.

Executive Summary

The announcement on Friday 9 August 2019 that Australia's Environment Ministers had been tasked with banning the export of recyclable plastic waste and other materials in favour of developing a domestic market was welcomed by many, including the recycling sector.

The announcement came amid a worsening national recycling crisis. In July, the collapse of Victorian recycler SKM saw thousands of tonnes of valuable recyclable material from households being sent to landfill.

It is hoped that COAG's leadership will provide much needed direction and stimulus, to start the process of solving the current crisis and helping Australia build a functioning and productive resource recovery market for waste. A commitment to local processing, and the creation of local markets for hundreds of thousands of tonnes of recovered materials represents a considerable challenge. However, it all starts with recognising recyclable materials as a valuable resource and not merely as a burden.

Key Trends

- ▶ EY estimates that only \$4.2 million worth of recyclable material is currently captured from our waste each year. If Australia built a world-class recycling system locally, EY estimates that more than \$328 million worth of recyclable material per year could be captured and used in manufacturing and construction.
- ▶ This means that Australia is wasting an opportunity worth up to \$324 million per year by not taking advantage of the recyclable material that goes in kerbside bins.
- ▶ Australia's waste problem is largely a behavioural problem. Reducing contamination in our recyclables requires a fundamental behavioural shift – better information for households, clearer rules on what can be recycled, and possible new infrastructure and incentives.
- ▶ A model for improving recycling means looking at a product's life-cycle, from packaging design, materials choice including reusable packaging [and recyclable packaging] to on-pack information, packaging systems and collection and recycling services.
- ▶ Proper sorting of recyclable before collection, rather than after, is key to extracting maximum value from recyclables.
- ▶ More recycled material should be included in the production of goods, infrastructure and packaging.
- ▶ Harmonisation of regulation between federal, state and local governments should be considered as a way to provide clarity about the types of materials that can be recycled.
- ▶ Data collection should be improved to better understand both the issues in the market, as well as the opportunity in our kerbside bins.
- ▶ Further investment, drawing on state waste levies and federal funding, should be directed to developing the collection, recycling and markets to create a sustainable domestic recycling industry.



Australia's wasted opportunity

Australia's kerbside recycling system is dominated by a single bin system where different materials (plastic, metal, paper and glass) are 'co-mingled'. This approach increases contamination rates and reduces the quality of the collected materials. For example, glass and paper become cross contaminated (glass dust in the paper), dramatically reducing the value of the paper. Further, the compacting process during collection can crush the glass to a size that is challenging, and therefore expensive to sort.

As an example, a high-density polyethylene (HDPE) milk bottle collected as mixed plastic waste has a market value of \$110 per tonne. This is well short of the market value for clean HDPE of \$500 per tonne.

Worse, if the milk bottle is contaminated with food, a label, or even a lid, it might need to be disposed of in landfill at a cost of \$130 per tonne.

Contamination comes in two main forms: one is the addition of foreign matter (food residues, non-recyclable materials,

other types of waste in the recycling bin); the other is cross-contamination (glass in paper being the strongest example). Contamination rates in Australia average between 4 and 16 percent of collected recyclable material¹. These high contamination rates are a key reason why countries across Asia closed their doors to Australia's waste.

Removing contamination is a labour intensive and therefore costly process. Contaminated waste also costs recycling material processors up to \$200 per tonne to dispose of in landfill². This cost is subtracted from the recoverable value of the materials in the kerbside bin.

In short, Australia's kerbside recycling is not optimised to gain the best value from the materials collected, especially in the current climate. While we are seeing early signs of hope with some councils responding to the recycling crisis by introducing additional bins to better separate materials³, more needs to be done to extract the full value of this resource.

¹ Department of the Environment and Energy: National Waste Report, November 2018

² Report to the Senate of the inquiry into the waste and recycling industry in Australia, 2018 (page 54)

³ City of Yarra 'waste revolution trial' <https://www.yarracity.vic.gov.au/waste-revolution-abbotsford-trial/how-to-recycle-glass>

Finding the treasure in trash

The communique from COAG emphasised high-value recycled commodities. As the market value of recycled materials is greatly influenced by their quality, there needs to be a focus on properly-sorted recycled materials that are free of contamination.

Market price data for recovered recyclable materials illustrates the significant difference between sorted and unsorted materials. The same materials when sorted are

worth significantly more than when they are mixed or contaminated, as seen in Figure 1. In the current market some unsorted materials (paper/cardboard and mixed plastic type 3-7) have zero or negative value. For other materials, prices are quite strong.

Figure 1: Commodity prices for low value and high value materials

Material type	Material grade	Market value (per tonne) at July 2019
Paper and paperboard (cardboard)	Mixed paper and paperboard	\$0
	Newsprint and magazine	\$190
	Old corrugated paperboard	\$200
	Box board	\$75
Glass packaging	Mixed glass	-\$30
	Source separated glass	\$70
Plastic packaging	Polyethylene terephthalate (PET)	\$380
	High-density polyethylene (HDPE)	\$500
	Mixed (1-7)	\$110
	Mixed (3-7)	-\$20
Metal packaging	Steel/aluminium packaging	\$135/\$1100
Contamination/sorting losses	Landfill	-\$130

Source: Sustainability Victoria Recovered Resources Market Bulletin, July 2019

EY estimates the actual value of a co-mingled bin to be as low as \$2 per tonne when factors such as contamination and unsorted materials are taken into account. EY based this finding on the co-mingled value of the materials in Figure 1, in the proportion they occur in a typical kerbside bin.

Using the prices for sorted materials, a typical kerbside bin could be worth as much as \$156 per tonne. In this scenario,

paper and cardboard are separated, glass is sorted not crushed, valuable plastics are separated, and contamination is eliminated. This shows that the same materials if collected differently have a considerably higher value than the current business model achieves (see comparison in Figure 2 below).

Figure 2: Co-mingled versus sorted recycling



Typical make up of a bin (average) ⁴	Value per tonne - Co-mingled ⁵	Value per tonne - sorted ⁶
51.5% paper and cardboard	\$0	\$90.56
27% glass	-\$8.25	\$19.25
7.5% plastic (grades 1-7)	\$8.25	\$19.20
4% metal (aluminium and steel)	\$15.05	\$15.05
10% contamination (1% in high value scenario)	-\$13	-\$1.30
Potential value (rounded to the nearest tonne)	Value of bin if co-mingled = \$2.04	Value of bin if sorted = \$156.51

Source: EY, 2019

EY estimates that only \$4.2 million worth of recyclable material is captured from our waste each year. If we built a world-class recycling system, EY estimates that we could capture up to \$328 million worth of recyclable material⁷.

Ultimately, there is an opportunity worth up to \$324 million per year sitting in Australia's kerbside bins that is not being grasped.

To achieve the higher value scenario, considerable market development would be required either locally or in overseas markets. Prices quoted are for high quality materials for which there may be limited local supply or markets.

⁴ Department of the Environment and Energy: National Waste Report, November 2018

⁵ Based on data from the Sustainability Victoria Recovered Resources Market Bulletin, July 2019

⁶ Based on data from the Sustainability Victoria Recovered Resources Market Bulletin, July 2019

⁷ Based on data from the 2018 Sustainability Victoria Report



How do we maximise the value of Australia's recyclables?

A coordinated approach to optimise the value of the resources in the recycling stream is required. Materials should be used for the highest value application possible. A coordinated approach will help the transition to a circular economy that encourages the continued use of resources. For example packaging containers should be recycled into high value applications such as more packaging where possible rather than into lower value applications.

EY analysed the materials in a typical household bin, the current market and potential market opportunities. For each material, EY identified the opportunities and market intervention required to maximise the value of recyclable materials, including the current and potential grade and therefore the potential increase in value. EY also identified the interventions that would be required to achieve the maximum benefit for that recovered material in Figure 3.

Figure 3: Opportunities and interventions required to unlock the value in recycled materials

Material	Current Grade	Current Value	Potential Grade	Potential value	Potential value Increase	Market opportunity	Intervention required
Paper and Cardboard	Mixed	L	Sorted paper	M	H	Local paper manufacturers	Source separation Market development
			Sorted cardboard	M	H	Local carton manufacturers	Source separation Market development
Glass	Mixed crushed	VL	Mixed crushed/ fines	L	M	Increased use as road base/ replacement for natural sand	Market development including commitment from markets, specification development, trials Investment in production facilities
			Sorted glass/ cullet	LM	M	Local container manufacturers	Source separation (kerbside, CDS)
Plastics	Mixed 1-7	L	Sorted 1-2	H	H	Strong international market	Source separation (kerbside, CDS) Post collection sorting
		L	Mixed 3-7	VL	-	Plastic roads Energy from waste	Product development Market development Infrastructure development
Contamination	Mixed	-	N/A	H	H	Elimination of contamination Energy from waste	Household education Improved labelling

Source: EY, 2019

What changes need to be made?

Australia will need to adopt best practice local and international models of resource recovery, recycling and market development if it is to build a sustainable domestic recycling sector. These changes will help facilitate Australia's move to a circular economy model that encourages the continual use of resources. The following suggestions are based on compelling local and international approaches:

01 Education to reduce contamination

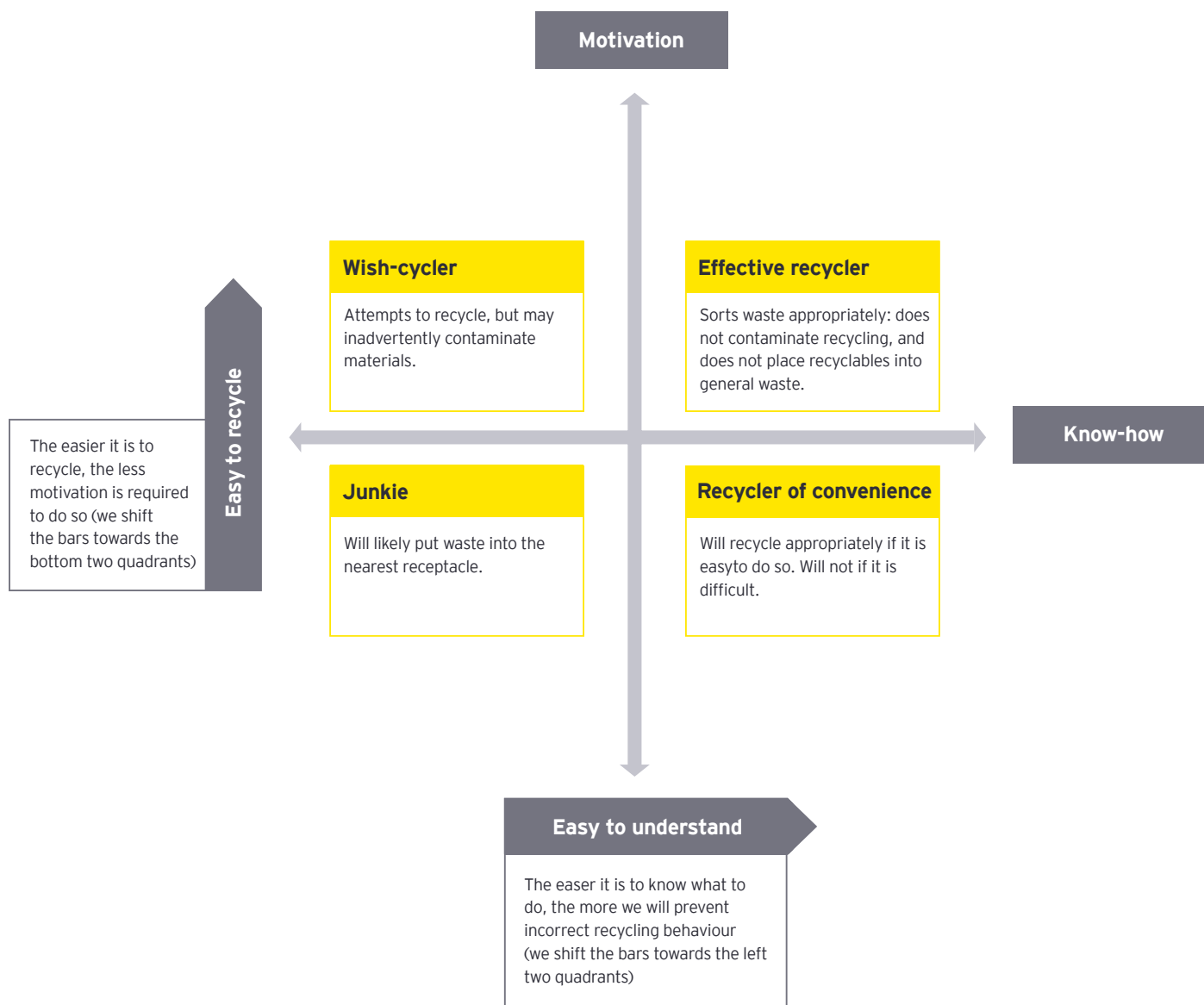
Reducing contamination requires better information for households, clearer rules on what can and can't be recycled, and possible incentives.

- ▶ Ensure households are suitably informed about what can be recycled.
- ▶ Reduce cognitive and motivational ask of people to interpret recycling. For example, use unmissable STOP/GO labelling on packaging matching that on bins (consistent across the nation) or use deliberate identifiers such as bins shaped like bottles.
- ▶ Provide incentives for brands to include adequate information on packaging (including taxes and policy settings).
- ▶ Provide incentives for households to reduce contamination.
- ▶ Provide convenient alternatives for recycling materials not currently recyclable through kerbside schemes (soft plastics, composites).

Faced with uncertainty, some people are even tempted to 'wish-cycle', which is the act of placing non-recyclable materials in the recycling bin, in the hope it might be recycled. The behaviour of others, such as recyclers of convenience and "Junkies", people who do nothing despite all available information (see Figure 4 below), also need to be addressed.

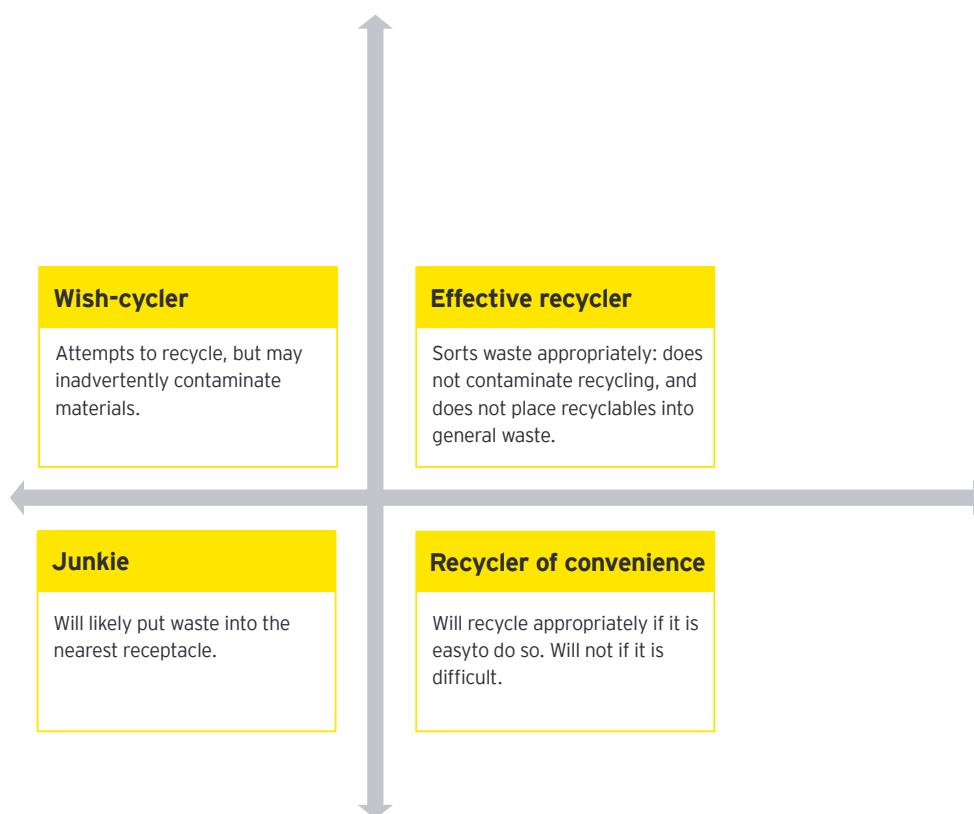


Figure 4: Architypes of typical recyclers based on behavioural attributes



Source: EY, 2019

Figure 5: Effective environmental and education design increases the proportion of people who are effective recyclers



Source: EY, 2019

To avoid this, EY's behavioural change experts recommend both making it easier to understand what to recycle, as well as making it more convenient to do. By doing so, we create a larger group of effective recyclers, and reduce the number wish-cyclers, recyclers of convenience and people who do nothing.

Making it easier to know what to do, for example, could be achieved by having well-designed recycling bins, appropriate signage and reward systems for people/households that do the right thing.

There is also evidence that the most effective behavioural interventions happen as close as possible to the decision being made. This means that information provided at the point of putting something in the bin (or other key decision points like buying products that have more or less waste) is likely to be more effective. These sorts of interventions are a type of education, but it doesn't require as much recall or cognitive attention on the part of individuals.

In this model, impact is more about 'moving the bars' rather than 'moving the people'. For instance, in an environment where it's easier to recycle, you move the horizontal axis (or measure of motivation) shifts down so that more people fit into the 'effective recycler' and 'wish-cycler' quadrants (equating to an intervention that induces more people with a lower motivation to act and recycle properly).

In an environment where it is easier to know what to do, the vertical axis moves to the left (equating to an intervention that induces more people to act based on lower "know-how") so that more people are in the 'Effective Recycler' and 'Recycler of convenience' quadrants seen below in Figure 5.



02 Improved sorting at source

We need to consider sorting prior to collection, rather than after.

- ▶ Re-consider household collection systems to maximise sorting and maintain the quality of collected materials. The glass industry states that glass only collection could increase to 90 per cent compared to between 30 and 60 per cent currently⁸
- ▶ European models include a greater emphasis on source separation including dividers in bins and/or colour coded bags that can be optically sorted at the recovery point such as Germany which has multiple bins just to sort coloured glass. Other countries like Sweden have recycling stations in residential areas.
- ▶ Build a national container deposit scheme (CDS) which will increase the quality of recovered materials. For example, the quality of glass collected through CDS is considerably higher than glass collected through co-mingled kerbside and therefore more easily recycled. Similarly, plastics collected through CDS are expected to be higher quality than via kerbside⁹.
- ▶ Consider container re-use schemes. Most European and some North American jurisdictions have re-use schemes for bottles. These models could work in the more densely populated parts of Australia.
- ▶ Ensure packaging is easily separable and recyclable by working with the Australian Packaging Covenant Organisation and their members (who sell goods with packaging) to develop packaging that is easily separated by users and recyclable through kerbside schemes.

Recent announcements in Victoria indicate households could be given a greater number of bins to facilitate better sorting in an effort to address the recycling crisis in the state. As identified above, this is in line with international best practice.

However, EY also advocates a consistent national approach be adopted as the recycling sector notes variations within states and between states hampers coordination and ultimately leads to an increase in low value 'mixed waste'.

⁸ Report to the Senate of the inquiry into the waste and recycling industry in Australia, 2018 (page 102)

⁹ APCO Packaging Material Flow Analysis 2018 (page 40)

03 Market development

Considerable growth in the uptake of recycled materials will be required to realise the high value prices. However, as a principle, high quality materials are more likely to find a market. Unless properly sorted, materials such as paper and cardboard will not find a market and will lead to further stockpiling. Innovation to grow the markets for these materials is required.

Recycled materials are already used in roads and infrastructure including recycled glass fines, plastic as an additive to asphalt, and recycled plastic railway sleepers. While the Prime Minister's announcement provides confidence to the sector, if Australia is to find a use for all its recycled and recyclable materials, it will require considerable additional interventions and investment.

Support from government procurement policies and initiatives, supported by an investment of waste levies, alongside federal funding would help achieve the level of market growth required, including:

- ▶ Incentives for investments in new product development to ensure products meet technical specifications and can meet demand for recyclability.
- ▶ A tax or levy on virgin materials to create a price advantage and hence greater demand for recycled content, as has been suggested in the European Union and United Kingdom recently.
- ▶ Coordinated policies at the national, state and local government level to ensure products meet environmental, and community expectations.
- ▶ Research to understand the environmental and economic impact of using these materials in roads and rail infrastructure.
- ▶ Subsidies for materials to reach regional areas
- ▶ Documented trials to demonstrate the feasibility and techniques for working these new materials.
- ▶ Procurement policies, and mechanisms including targets and other incentives to support the market for recycled materials.

In addition, the use of recycled materials in roads and infrastructure will need to be matched to the value of the material. Where possible, materials should only be used when other higher value opportunities for the material have been exhausted.



Conclusion: A future model for recycling in Australia

The lost value of kerbside recycling is almost \$324 million each year. This presents a clear opportunity to reform and reshape the sector, starting with household recycling and consumer behaviours, and extending to the development of a world class and sustainable recycling system.

We cannot realise this value without a seismic shift in consumer behaviour. Firstly, we need to treat waste as a tradeable commodity where quality is an important driver of price. Secondly, we need to restore people's faith in recycling so that they believe that what they put in recycling bins is actually being recycled.

The most effective way for this to occur is through the formation of a nationally consistent scheme, that includes a consumer education program, clearer packaging to aid better sorting, and more transparency around supply and demand to enable investment in infrastructure so we can deal with our waste onshore.

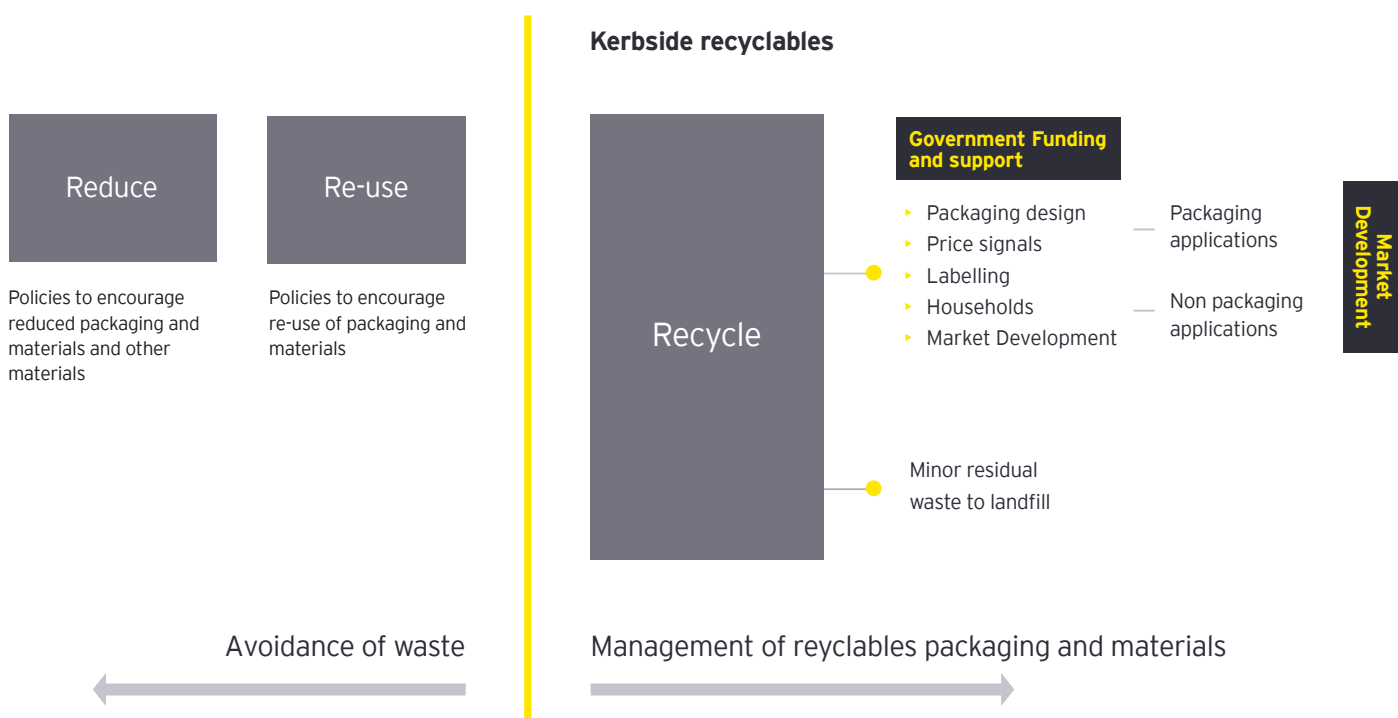
The first step of committing to domestic processing of Australia's recycling has been achieved and is a turning point in Australian waste management. We are starting to see a shift in our thinking but need to do more to treat our waste as a tradeable resource, like iron ore or gold, rather than just waste.

However, recycling only addresses the end of the supply chain. A comprehensive approach includes encouraging a reduction in waste, re-use, recycling and most importantly market development.

An investment in systems of production and consumption that recognise the waste management hierarchy - Reduce-Re-use-Recycle - and where possible operate on circular economy lines, to align with worlds best practice are required.

This change in approach, coupled with adequate investment of state waste levies, and Federal funds will achieve a sustainable domestic recycling industry.

Figure 7: A systems approach to recycling in Australia



Source: EY, 2019



Methodology

EY's modelling leverages waste commodity price data from Sustainability Victoria's July 2019 Recovered Resources Market Bulletin with research from the Department of the Environment's 2018 National Waste Report recycling data.

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APAC no. AU00003628

PH 1012691

ED None

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**NATIONAL WASTE & RECYCLING
INDUSTRY COUNCIL**



White Paper

**REVIEW OF WASTE
LEVIES IN AUSTRALIA**

October 2019

Publication Information

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Acknowledgements

Prepared with the assistance of representatives from

NWRIC members – JJ Richards & Sons, Cleanaway, SUEZ, REMONDIS, ResourceCo, Alex Fraser Group / Hanson, Solo Resource Recovery, Veolia, Sims Metal Management.

NWRIC state affiliates – WCRA, WRIQ, WRINT, WRISA, VWMA, WRIWA

and

Jennifer Hughes of Beatty Legal.

Table of contents

Executive Summary

1. Introduction

2. A national summary of levies

2.1 New South Wales

2.2 Queensland

2.3 Victoria

2.4 South Australia

2.5 Western Australia

2.6 Other jurisdictions.

3. Impacts and benefits of levies

4. Recommendations for reform

Executive Summary

Waste or landfill levies are a key regulatory tool used to improve recycling and fund environmental liabilities from waste generation. They have a significant effect on both the commercial environment of nearly every waste and recycling business, and community behaviour. They also generate significant funds for each jurisdiction. Therefore, carefully considered levy regulations nationwide are essential to advancing Australia towards a circular economy.

This white paper reviews the current status of waste/landfill levies across Australia. It examines by jurisdiction, how much the waste/landfill levies are, what waste types are levied, where and when do they apply, how they are administered, the amount of funds raised each year and how these funds are spent.

It also analyses the impacts and benefits of these levies on waste and recycling outcomes across Australia, identifies a number of issues that need to be addressed urgently and recommends three major actions to resolve these issues, ensuring levies achieve their goal of facilitating better waste and recycling outcomes.

The review does not include an in-depth analysis of the economic, environmental social effectiveness of the levies, price points or return on investment.

Waste/landfill levies were first introduced in 1971 by NSW at a \$0.56 per tonne. Since then South Australia, Victoria, Western Australia and Queensland have introduced levies. In 2018-19 rates ranged in price from \$0 to \$250 with an estimated \$1.13 billion raised. In 2019-20 this is expected to increase to \$1.54 billion with the introduction of the waste levy in Queensland. This will equate to approximately \$58 per capita per year, up from \$39 per capita per year in 2018-19.

Of the \$1.13 billion funds raised in 2018-19, an estimated \$282 million or 25 per cent nationally was reinvested into activities relating to waste and recycling, state EPA's or climate change (in the case of Victoria). At a state level the reinvestment rate of the levy ranged from 10.9 per cent in NSW, 25 per cent in WA, 66 per cent in Victoria to 73 per cent in South Australia.

Funds not reinvested were either retained in consolidated revenue (as in the case of NSW and WA) or retained in nominated funds such as Victoria's Sustainability Fund, SA's Green Industries Fund or SA's Environment Protection Fund where some of the funds may be invested in various non-waste or recycling related environmental activities.

In 2019-20 it is estimated that of the \$1.54 billion in funds raised, around \$569 million or 37 per cent will be reinvested into waste and recycling activities. This increase can largely be attributed to the Queensland government's commitment to reinvest over 70 per cent of the levy, with local councils receiving 105 per cent of their levy contribution.

On the positive side, levies have increased resource recovery and supported the development of local resource recovery businesses including material recovery facilities; processing facilities for plastics, paper, cardboard, glass, timber, organics; alternate waste treatment plants; and waste-to-energy facilities for fuel manufacture, thermal and electricity generation.

Levies have also funded waste and recycling initiatives. These range from state EPA and local government environmental compliance activities, community and business waste and recycling education campaigns, research and development, data collection, construction of new infrastructure by local government and private enterprise, to cleaning up waste and pollution generated from illegal actions.

On the negative side however, differentials in levies across regions and between states has created a levy avoidance industry, both legal and illegal resulting in potentially recyclable material ending up in landfill, and hazardous material being disposed of inappropriately. This has become big business particularly in NSW and WA due to the significant variability of levy rates for solid, hazardous and liquid wastes. It is estimated that between 1.5 million to three million tonnes of waste has been transported per annum either significant distances to landfills where levies do not apply, dumped into the environment, stockpiled or in the case of hazardous wastes hidden or mislabeled to reduce or avoid state levies.

Key learnings from this analysis are the vastly different approaches states and territories take to levies. From how much is charged between regions and states; what wastes are levied (i.e. solid, liquid, hazardous or prescribed) and how they are defined; where liability for the levy is charged; how the levy is administered and how levy funds are managed, reinvested into activities to improve the waste and recycling practices and reported on.

Of major concern is the lack of transparency in most jurisdictions of how much funds are collected per year, how and where they are invested in waste and recycling activities and assessment of the effectiveness of the investment in achieving waste and recycling strategies and targets.

The NWRIC believes there is an urgent need to reform the current state levy structures, pricing, administration and investment management. It is critical this reform is done in a nationally coordinated manner between all jurisdictions including the federal government to remove interstate inconsistencies that are clearly driving poor waste disposal behaviours, contrary to the objects of the levy to increase resource recovery and enhance environmental protection.

This change is essential to ensure the best return on investment of levy funds, and to deliver better waste management and resource outcomes that communities expect.

Specifically, the NWRIC recommends that state and territory governments together with the federal government:

- 1) Develop a National Levy Pricing Strategy through COAG that prevents the inappropriate disposal and movement of waste between regions and states and ensures the resource recovery industry remains viable and competitive by removing significant geographic levy differentials and providing recycling residual discounts or recycling rebates where justified.
- 2) Develop National Waste Levy Protocols for which wastes should be levied (i.e. solid, liquid, hazardous and prescribed), where the liability for the levy sits (i.e. at point of generation and is portable across regions and states), how far waste can be moved (i.e. proximity within or across states) and how the levy is administered (e.g. payments, bad debts).
- 3) Are more transparent and accountable for the total amount of levies collected by each jurisdiction by;
 - setting up a separate Levy Trust Account (similar to Victoria's MILL Trust Account) where all levies are retained;
 - guaranteeing a minimum percentage of levies (suggested 50%) to be spent annually on activities to implement the jurisdiction's waste avoidance and resource recovery strategies, resource recovery and remanufacturing industry development plans, market development initiatives and infrastructure plans; and
 - reporting annually on the total amount of levy funds collected and spent (including non-waste and recycling related expenditure) and outcomes achieved.

1. Introduction

Waste or landfill levies are a key regulatory tool used to improve recycling and fund environmental liabilities from waste generation. They have a significant effect on both the commercial environment of nearly every waste and recycling business and community behaviour. They also generate significant amounts of funds for each jurisdiction. Therefore, carefully considered levy regulations nationwide are essential to advancing Australia towards a circular economy.

They are usually levied at the gate of landfill facilities owned and / or operated by either the private sector and local government and remitted to State governments.

Waste/landfill levies were first introduced in 1971 by NSW at a \$0.56/tonne. Since then South Australia, Victoria, Western Australia and Queensland have introduced levies.

In 2018-19 levy rates ranged in price from \$0 to \$250 with an estimated \$1.13 billion raised. In 2019-20 this is expected to increase to \$1.54 billion with the introduction of the waste levy in Queensland. This will equate to approximately \$58 per capita per year, up from \$39 per capita per year in 2018-19.

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Funds not reinvested were either retained in consolidated revenue (as in the case of NSW and WA) or retained in nominated funds such as Victoria's Sustainability Fund, SA's Green Industries Fund or SA's Environment Protection Fund where some of the funds may be invested in various non-waste or recycling related environmental activities.

In 2019-20 it is estimated that of the \$1.54 billion in funds raised around \$568 million or 37 per cent will be reinvested into waste and recycling activities. This increase can largely be attributed to the Queensland government's commitment to reinvest over 70 per cent of the levy, with local councils receiving 105 per cent of their levy contribution.

This white paper reviews the current status of waste/landfill levies across Australia. It examines by jurisdiction, how much the waste/landfill levies are, what waste types are levied, where and when do they apply, how they are administered, the amount of funds raised each year and how these funds are spent.

It also analyses the impacts and benefits of these levies on waste and recycling outcomes across Australia, identifies a number of issues that need to be addressed urgently, and recommends three major actions to resolve these issues, ensuring levies achieve their goal of facilitating better waste and recycling outcomes.

The review does not include an in-depth analysis of the economic, environmental social effectiveness of the levies, impacts of price points or return on investment.

1.1 How much material enters landfill every year?

The latest National Waste Audit for Australia reports that 21.7 million tonnes of material were sent to landfill in 2016/17¹ (these are the latest figures available). This is approximately 40% of the 54 million

¹ [National Waste Data Report 2018.](#)

tonnes generated (note this does not include waste ash from power stations). The breakdown by state is shown in Table 1.1.

Table 1.1 - Materials to landfill 2016-17²

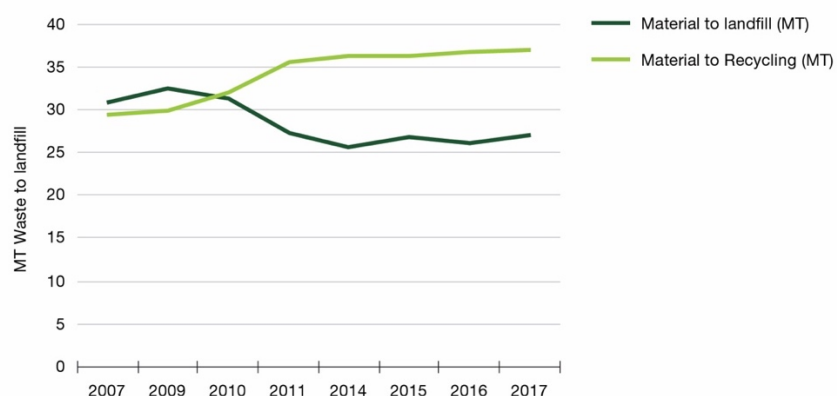
State/Territory	Tonnes	Tonnes per capita	Percentage
NSW	7,101,000	0.9	33%
Queensland	6,124,000	1.2	28%
Victoria	4,245,000	0.67	20%
Western Australia	2,360,000	0.89	11%
South Australia	666,000	0.39	3%
ACT	474,000	1.14	2%
Tasmania	453,000	0.87	2%
Northern Territory	305,000	1.25	1%
TOTAL	21,728,000	0.9	

1.2 How has this changed over time?

The volume of material to landfill has slowed over the last 10 years from 2007 to 2017 by an average fall of 1.4% per year. Translating to an annual average of 0.9 tonnes per capita. Meanwhile the mass of material being recycled has risen by a compound annual growth rate of 2.3%.

Figure 1.1 - Materials to landfill³ and recycling - 2007 to 2017⁴

Materials to landfill and Recycling – 2007 to 2017



² [National Waste Data Report 2018.](#)

³ The landfill figures also include waste ash disposed of on mine sites

⁴ [National Waste Data Report 2018.](#)

2. A national summary of levies

Waste levies currently apply in five States; NSW, Victoria, South Australia, Western Australia and Queensland. ACT and Tasmanian governments have indicated they are considering introducing levies. South Australia has recently decided to significantly increase its rates from mid 2019 and at the start of 2020. Victoria is currently reviewing its levy rates.

It is estimated in 2019-20 more than \$1,541 million per year will be raised by these five States. This is equivalent to an average of \$58 per capita, across all jurisdictions. This has increased by about \$443 million from 2018-19 due to the introduction of the levy in Queensland.

Table 2.1 - Summary of 2019-20 waste levy rates for all types of waste (i.e. MSW, liquid hazardous) estimated revenue and expenditure

State	Levy Rates* (\$ / t)	Estimated Levies (\$ m)	Estimated spending (\$ m)	Revenue per capita**	Hypothecated to waste & recycling activities ⁵
NSW ⁶	\$0 to \$143	\$771	\$154.3	\$100	19.9%
Queensland ⁷	\$0 to \$155	\$443	\$343	\$88	77% ⁸
Victoria	\$31 to \$250	\$239	\$170	\$34	72.4% ⁹
South Australia	\$55 to \$110	\$70	\$50.8	\$36	72.5% ¹⁰
Western Australia	\$0 to \$70	\$88	\$22	\$35	25% ¹¹
TOTAL		\$1,541	~\$569	\$58	36.9%

* For nominated regions within NSW, Qld, and WA no waste levy applies

** Based on total population of each jurisdiction

⁵ Includes State EPA/agency funding.

⁶ The levy is used to fund the *Waste Less Recycle More* program, that started in 2014 and runs to 2021 an estimated \$802 million over 9 years.

⁷ Introduced 1 July 2019.

⁸ 10% of the levies raised are returned to industry, and 105% of the levies raised by Local Government are returned. The mass of waste levied by local government is unknown by this whitepaper.

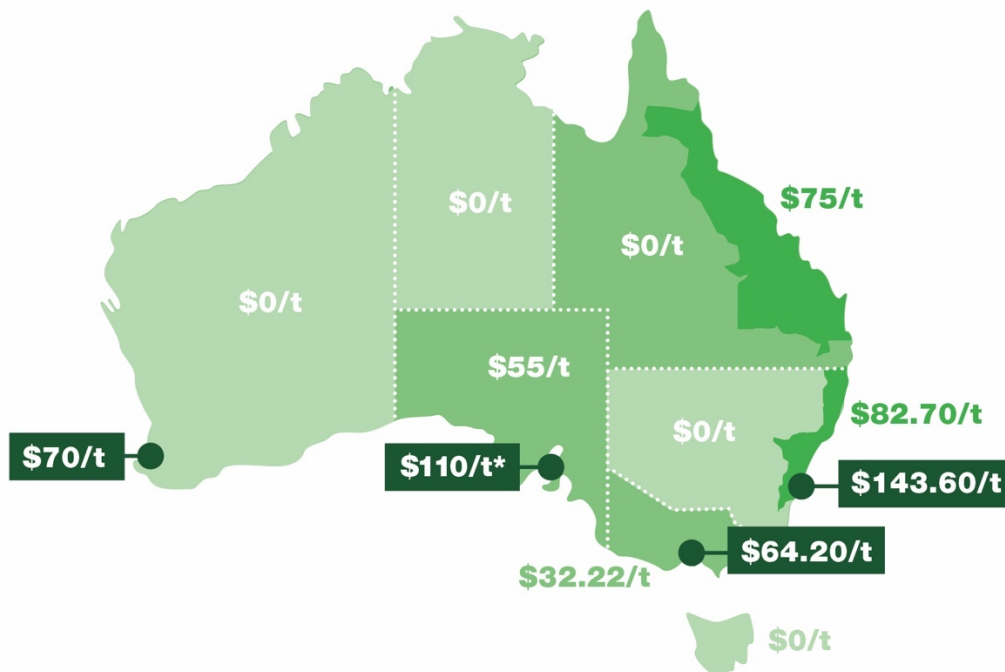
⁹ While a large percentage of the Victorian levy is returned to the Sustainability Fund, much of this money remains unspent.

¹⁰ The South Australian Waste Levy funds the EPA and GISA, but none is directly available to industry or Local Government.

¹¹ Based on 15/16 figures from the Waste Authority.

Figure 2.1 - Municipal solid waste levies for 2019-20 year

Municipal Waste Levies 2019-20



*South Australia's rate will increase to \$147/t on 1 January 2020.

Table 2.2 - Summary of future direction of waste levies in Australia

Jurisdiction	Direction of levy	Comment
ACT	Proposed levy	ACT government currently considering a levy to be introduced in 2021.
NSW	Increasing by CPI	NSW levy currently increasing by CPI ongoing.
Queensland	Started 1 July 2019.	Starting at \$75 per tonne, increasing \$5 per year to \$90 in four years 2022.
South Australia	Increasing	1 July 2019 \$110 per tonne Increasing to \$140 per tonne on 1 January 2020.
Victoria	Increasing by Treasurer's Rate, under review.	Victorian Government is currently reviewing the levy.
Western Australia	Stable	Stable, no announcements of a future levy change.
Tasmania	Proposed Levy	Tasmanian State Government considering a waste levy as part of its 2019 <i>Draft Waste Action Plan</i> , but no timeframe for implementation has been indicated.

2.1 New South Wales

2.1.1 Legal framework and history

In NSW, the Environment Protection Authority (NSW EPA) administers the waste levy. The current underpinning strategy for NSW Waste Levy is the [NSW Waste and Resource Recovery Strategy 2014-21](#) released in December 2014. The strategy states that the purpose of the levy is “to increase recycling, to limit the need for new landfills, reduce landfill disposal and turn waste into valuable resources.”

Table 2.3 – NSW levy legislation

Legislation	Summary	Further information
Protection of the Environment Operations Act 1997 (POEO Act)	The legislation underpinning the waste levy and regulations of waste management in NSW.	A summary is available here
Protection of the Environment Operations (Waste) Regulation 2014	The regulations which define the value and application of waste levies.	A summary is available here

From 1 August 2015, NSW broadened the waste levy liability beyond just landfills to operators of all facilities required to hold a licence to recycle, process or store waste storage. These operators now incur a levy liability on all waste received at their facilities, but this liability is extinguished if the waste is sent off-site for lawful re-use or disposal.

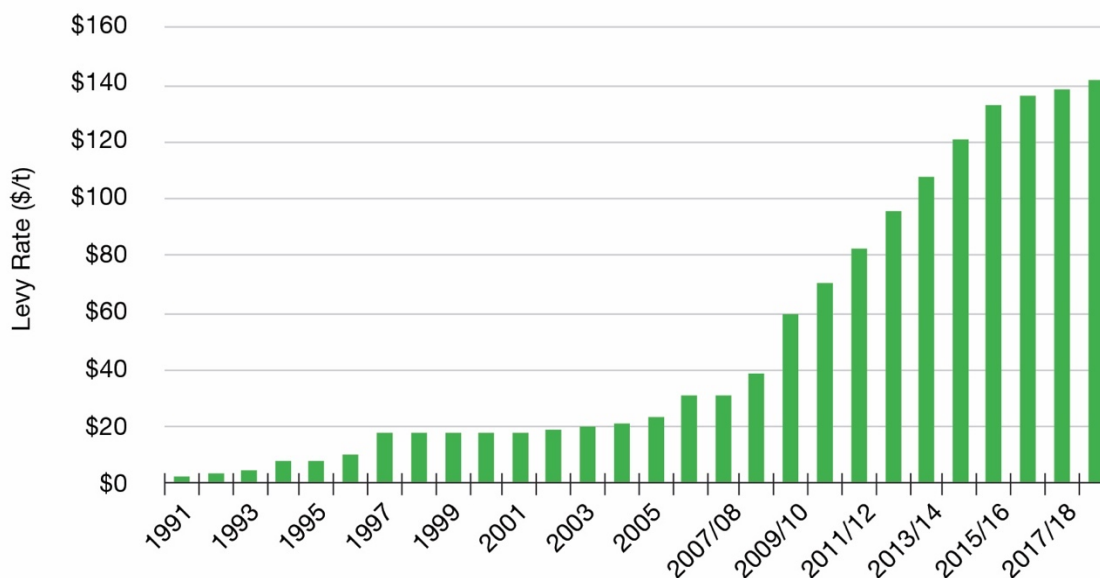
Payment of the levy is triggered where:

- waste is stockpiled on-site for more than 12 months, unless the waste has been processed at the facility to a standard required by a resource recovery orders and exemptions,
- waste is stockpiled above lawful ‘threshold’ limits, or
- waste is transported offsite for unlawful disposal or unlawful reuse.

New South Wales has the highest levy in Australia, it has applied the longest period, and it has raised the most capital. The NSW levy is almost the most complex levy in regard to differential rates. NSW is one of only two States with a liquid waste levy, the other is South Australia.

Figure 2.2 – History of NSW Levy rates since 1991¹²

NEW SOUTH WALES – Levy rate (\$/t) vs. year



Please note, the graph above does not include the levy between 1971 and 1990, which was 56 cents, as the revenue raised was very small in comparison to contemporary values.

2.1.2 Application of the levy and exemptions

Waste levies are applied differentially to different waste streams and within different geographic areas (see Table 2.4 below).

Reduced levies are available for:

- Virgin Excavated Natural Material (VENM),
- Trackable liquid wastes,
- Coal washery rejects, and
- Shredder floc.

There is also variance in the way the waste levy is paid, for example the liquid waste levy is due to be paid quarterly, while other landfill levies are due within 56 days.

NSW also provides for a number of [levy exemptions](#). These include;

- Mixed waste organic outputs.
- Community service exemption (i.e. charities and not-for-profit groups performing a community service that involves the collection or receipt of waste).
- Disaster outbreaks, and
- Dredging spoil.

¹² WCRA internal document courtesy of the NSW EPA.

2.1.3 Geographic application

The levy applies to the [regulated area of NSW](#) which has two areas, the Metro Levy Area (MLA) comprising Sydney metropolitan area, the Illawarra and Hunter regions and the Regional Levy Area (RLA) that includes the central and north coast local government areas to the Queensland border as well as the Blue Mountains, and Wollondilly local government areas.

NSW also applies the concept of levy portability, where the levy rates applies based on where the waste is generated, not where it is disposed.

2.1.4 Current and future levy rates

Table 2.4 below provides a summary of landfill levy rates for 2019-20. The NSW EPA has advised that the levy rate will only increase by CPI for the duration of existing waste strategy (until 2021).

Table 2.4 – Summary of NSW landfill levies 2019-20

Levy	2019-20 (per tonne)	Comments
Metro Levy Area (MLA)	\$143.60	Increasing by CPI*
Regional Levy Area (RLA)	\$82.70	Increasing by CPI*
VENM MLA	\$129.20	Increasing by CPI*
VENM RLA	\$74.40	Increasing by CPI*
Shredder Floc MLA	\$70.60	A time-based concession subject to review
Shredder Floc RLA	\$40.65	A time-based concession subject to review ¹³
Trackable Liquid Wastes	\$76.90	Complex definition ¹⁴
Coal Washery Rejects	\$15.00	Stable

2.1.5 2018-19 Estimated NSW levies raised and hypothecated to waste and recycling activities

In 2018-19 an estimated \$772 million¹⁵ was raised from the waste levy. Of this only \$84.3 million (11.5%) was reinvested into the waste and recycling sector via the NSW Government's *Waste Less, Recycle More* Initiative (see Table 2.5 and Table 2.6). There is no information available in the NSW Government budget papers on how the balance of the waste levy raised in 2018-19 of \$643m (88.4%) was allocated across the rest of the NSW Budget.

The NSW Government launched the [Waste Less, Recycle More](#) initiative in 2014 and extended it in 2017 for a further four years through to 2021. For the period 2017-21 a total of \$337 million has been allocated or \$84.25 million per annum across a suite of programs (see Table 2.5 below).

¹³ Currently under review, the outcome is yet to be resolved.

¹⁴ For the definition of trackable liquid waste - [see the NSW EPA website](#).

¹⁵ [2018-19 Budget NSW Statement. Revenue. NSW Government. Page 8.](#)

Table 2.5 - Waste Less, Recycle More Initiative funding 2017-21

Program	\$ m	Available to?
Local Government Waste & Resource Recovery Program	\$70	Local govt
Illegal dumping Prevention and Enforcement Fund	\$65	State & Local govt
Litter Prevention and Enforcement Fund	\$30	State & Local govt, Community
INFRASTRUCTURE PROGRAMS		
Systems for Household Problem Waste	\$57	State & Local govt
Waste & Recycling Infrastructure Fund	\$48	Industry & Local govt
Organics Infrastructure	\$35.5	Industry & Local govt
Business Recycling Program	\$22.5	Businesses
Recycling Innovation fund	\$5	Industry & Local govt
Heads of Asbestos Coordination Authorities Program	\$4	State govt
TOTAL	\$337	

Table 2.6 – NSW estimated levy hypothecation by sector 2018-19

To whom	Estimated* 2018-19 (\$m)	Percentage
Industry	\$11.1	0.13%
State Government	\$18.7	2.4%
Businesses	\$6.3	0.8%
Community	\$2.5	0.3%
Local Government	\$45.7	5.9%
Total Hypothecation	\$84.3	10.9%
General Revenue	\$687.7	89%
TOTAL LEVY RAISED	\$772	

* Allocations between sectors are an estimate based on the NSW EPA Waste Less, Recycle More program descriptions

2.1.6 2019-20 Estimated NSW levy raised and hypothecated to waste and recycling activities

The NSW Government has estimated it will raise \$771 million in 2019-20¹⁶. Of this the NSW Government allocated the following funds to waste and recycling;¹⁷

- \$143.3 million for programs to support the Waste Less Recycle More initiative, improve waste management and resource recovery and manage contaminated land, PFAS (per- and poly-fluoroalkyl substances), asbestos and high-risk hazardous waste and chemicals.
- \$10 million to pilot initiatives to recycle and re-use materials in solar panels and battery systems.

Table 2.7 – NSW estimated levy hypothecation by sector 2019-20

To whom	Estimated* 2019-20 (\$ m)	Percentage
Industry	\$18.87	2.4%
State Government	\$18.7	4.1%
Businesses	\$6.3	1.4%
Community	\$2.5	0.6%
Local Government	\$45.7	10.1%
Battery & PV Recycling	\$10.0	1.3%
Total Hypothecation	\$153.3	19.9%
General Revenue	\$617	80.1%
TOTAL LEVY RAISED	\$771	

* It is assumed the allocation of funds between the Waste Less, Recycle More programs have not changed significantly

2.2 Queensland

2.2.1 Legal framework and history

On 14 February 2019, Queensland Parliament passed amendments to the *Waste Reduction and Recycling Act 2011* to introduce the waste levy commencing 1 July 2019 with the *Waste Reduction and Recycling (Waste Levy) Amendment Regulation 2019* was gazette on 22 March 2019.

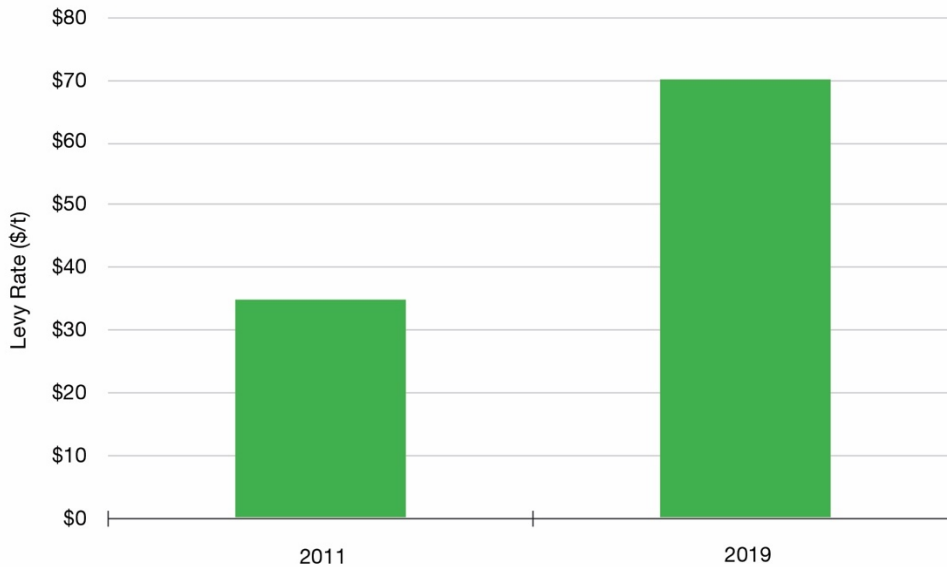
Queensland introduced a levy briefly in 2011, then repealed it. The new levy in Queensland applies from 1 July 2019.

¹⁶ [2019-20 Budget NSW Statement. Revenue. NSW Government. Page 6.](#)

¹⁷ The NSW 2019 Budget paper - [Planning, Industry And Environment Cluster.](#)

Figure 2.3 – History of Queensland Levy rates

QUEENSLAND – Levy rate (\$/t) vs. year



2.2.2 Application of the levy and exemptions

Waste residuals created by 'legitimate' resource recovery activities will receive a 50% discount provided the prescribed recycling efficiency is achieved. Go to *Waste Reduction and Recycling (Waste Levy) Amendment Regulation 2019*: [Division 4 - Discounting Waste Levy for residual waste](#) for specific details on each recycling process eligible for discounts.

There are also a number of exemptions, including;

1. Waste generated by natural disasters.
2. Wastes where disposal is required by regulation; such as asbestos and quarantine material.
3. Litter and illegally dumped material.
4. Waste received by charities as part of donations.
5. Treated dredge spoil.
6. Clean earth.
7. Wastewater that meets certain water quality criteria.
8. Alum sludge.
9. Fly ash.

2.2.3 Current and Future Levy Rates

The levy rates for 2019-20 are:

- General waste:¹⁸ \$75

¹⁸ Includes Municipal solid waste, commercial and industrial; construction and demolition.

- Regulated waste: Category 1: \$155
- Regulated waste: Category 2: \$105

These rates will each rise by \$5 per tonne for the next two years.

2.2.4 Geographic application

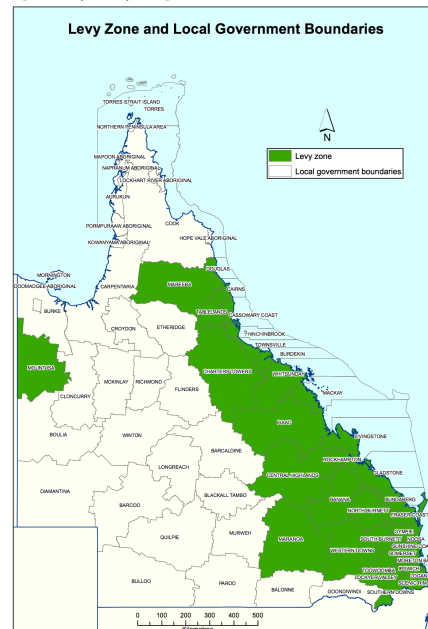
The Queensland levy will apply to 38 of 77 Local Government areas. It will cover 90% of Queensland's population. As in NSW the principle of levy portability applies where levies will be 'portable' outside the levy zones, meaning waste liability follows waste generated inside the levy zones if sent to a disposal site outside the levy zones (see Figure 2.4 below)

Figure 2.4 - Queensland levy zones and levy application

Table 2: Application of the levy zone

Waste generated in	Waste disposed in	Levy applied
Levy zone	Levy zone	Levy zone rate applicable to waste type
Levy zone	Rest of Queensland	Levy zone rate applicable to waste type
Rest of Queensland	Levy zone	Levy zone rate applicable to waste type
Rest of Queensland	Rest of Queensland	None
Other states	Queensland	Levy zone rate applicable to waste type

Figure 1: Levy zone by local government area



2.2.5 2018-19 Estimated Queensland Levies raised and hypothecate to waste and recycling activities

No levy was raised in 2018-19. The government provided \$5 million to local government to assist with waste disposal facility infrastructure upgrades prior to the introduction of the levy as part of the [2018-19 Local Government Levy Ready Grants Program](#).

2.2.6 2019-20 Estimated Queensland levies raised and hypothecated to waste and recycling activities

The Queensland Government estimates it will raise \$443 million from the levy in its first year.¹⁹

Affected councils will receive a 105% rebate on their levy payments, the rebate being based on the tonnage disposed of in the previous financial year multiplied by the current levy rate. This rebate will reduce over time.²⁰

¹⁹ *Queensland Budget Strategy and Outlook 2019-20 - Page 14 (79 in document).*

²⁰ [Waste levy announced for Queensland to stem interstate dumping](#). *Brisbane Times*.

Queensland has also announced \$33 million per year will be allocated from the levy to the 'Resource Recovery Industry Development Program' (\$100 million over the first three years).²¹

- This program is open to local government and industry.
- The funding will target three areas - Infrastructure or machinery up to \$5 million on a dollar-for-dollar basis, incentives for the development of new large-scale facilities, and support for advanced feasibility studies for innovative resource recovery, recycling and waste management projects.

Table 2.8 – Estimated Queensland levy hypothecation by sector 2019-20

To whom	Estimated 2019-20 (\$ m)	Percentage
Industry & Local Government*	\$33.3	7%
Local Government	\$310	70%
State Government	\$0	0%
Total Hypothecation	\$343	77%
General Revenue	\$100	23%
TOTAL LEVY RAISED	\$443	

*Resource Recovery Industry Development Program is available to both industry and local government.

2.3 Victoria

2.3.1 Legal framework and history

The Municipal and Industrial Landfill Levy (MILL) is collected by the Victorian EPA and was established in 1992, at \$2 per tonne. At the time of writing, the Victoria waste levy was under review.

On 15 April 2013, the then Victorian Minister for Environment Ryan Smith released the new Victorian waste policy titled '[Getting full value: the Victorian Waste and Resource Recovery Policy](#)' (PDF). The policy sets out a vision for Victoria's waste management and resource recovery over the next 30 years and strategic priorities for the next 10 years.²²

The Policy was developed in response to the Victorian Auditor General's Office audit report in December 2011 which found that "ineffective planning, leadership and oversight have resulted in inadequate coordination of implementation and limited progress" in reducing municipal waste. Victoria's previous waste policy, *Towards Zero Waste*, expired in 2014.

The policy describes that the vision for waste management in Victoria is to;

- Protect the environment and public health,

²¹ [Queensland Government Waste Strategy fact sheet.](#)

²² With authorial credit to [Damon Jones from Norton Rose Fulbright.](#)

- Maximise the productive value of resources, and,
- Minimise long term costs to households, industry and government.

The policy identifies the following four key objectives for the waste management and resource recovery system;

- Support Victoria's economic prosperity,
- Function as one integrated state-wide waste system,
- Protect public health and preserve local amenity, and
- Contribute to environmental protection.

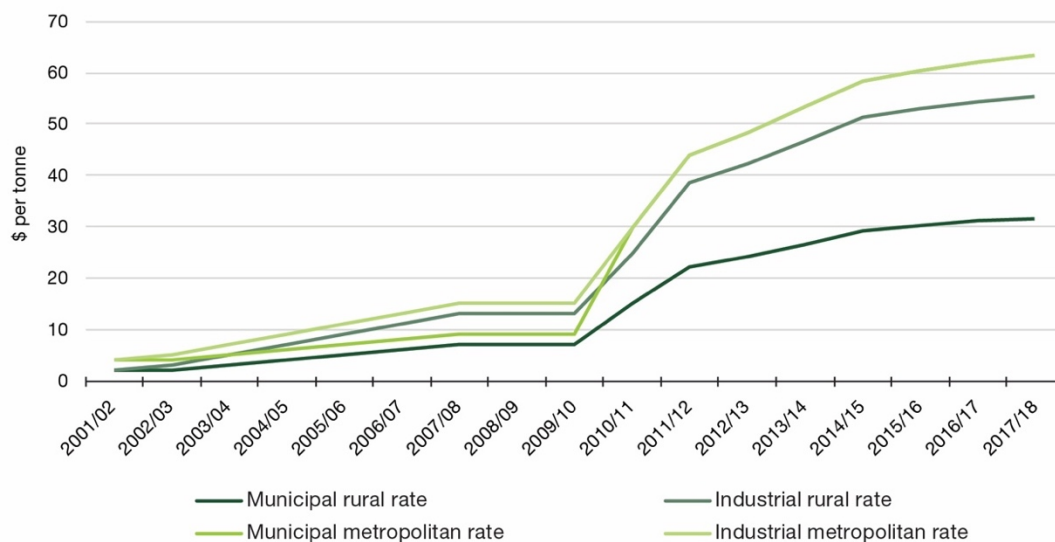
Table 2.9 - Victorian levy legislation

Document	Summary	Further information
Environment Protection Act 1970	<p>Part IX, Division 3 contains the provisions in relation to the application and payment of the levy.</p> <p>Part X, Division 6 establishes the General Landfill Levy Account and the Municipal and Industrial Levy Trust Account and sets out the criteria for payment of funds from those accounts.</p>	Available from the Victorian EPA

Unlike other State, the Victoria levy has graduated slowly and progressively. It has likely raised between \$1 and \$1.5 billion since inception. The Victoria levy is currently one of the lowest in Australia.

Figure 2.5 - Victorian Municipal and Industrial Landfill Levy Rates since 2001-02

Changes in the Victorian Municipal and Industrial Landfill Levy rates



Note: Annual rate increases started in 2010–11. At that time, the industrial and municipal metropolitan rates became the same rate.
Source: VAGO based on EPA data.

2.3.2 Application of the levy and exemptions

The Victorian State Government applies differential waste levies to;

- Municipal Waste,
- Industrial Waste and,
- Prescribed industrial waste.

There are no waste levy exemptions in Victoria, however, there are rebates for recycled wastes and cover materials (see sections 50SA, 50SAA and 50SAB of the Act).

2.3.3 Current and future levy rates

Table 2.10 – Summary of Victorian landfill levies 2019-20

Levy	Fee Units ²³	2019-20 \$ / tonne	Comment
Metro Municipal	4.45	\$65.90	Currently under review.
Metro Industrial	4.45	\$65.90	
Rural Municipal	2.23	\$33.03	
Rural Industrial	3.90	\$57.76	

The Department of Environment, Land, Water and Planning (DELWP) is currently reviewing the effectiveness of the waste levy. From 1 July 2020, Victoria will apply a new Environmental Protection Act and regulations, with public consultation currently taking place.

2.3.4 Geographic application

Landfill levies in Victoria are statewide and are differentiated by metro and rural waste, with a 50% discount applied in rural areas on municipal waste and approximately 13% for industrial waste.

2.3.5 The Municipal and Industrial Landfill Levy Trust Account and Sustainability Fund

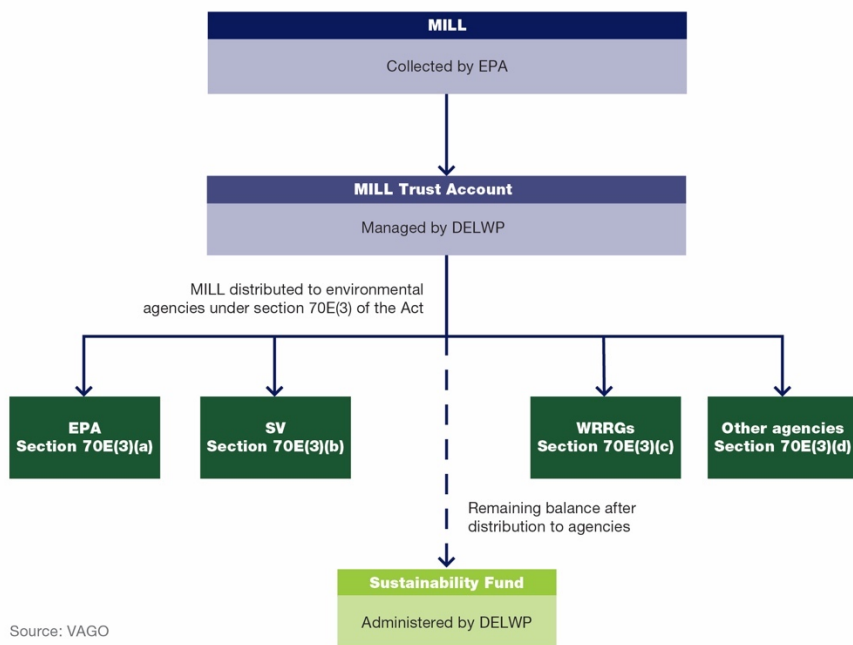
Victoria pays its waste levy into the Municipal and Industrial Landfill Levy Trust Account. Figure 2.6 below shows how the funds are collected and then allocated across government agencies and the Sustainability Fund. The levy funds are distributed between the EPA, Sustainability Victoria, Waste Resource Recovery Regional Groups, Other Agencies and the Sustainability Fund.

The Sustainability Fund invests in activities that foster sustainable use of resources and best practices in waste management as well as community action or innovation to reduce greenhouse gas substance emissions or adaptation or adjustment to climate change in Victoria.

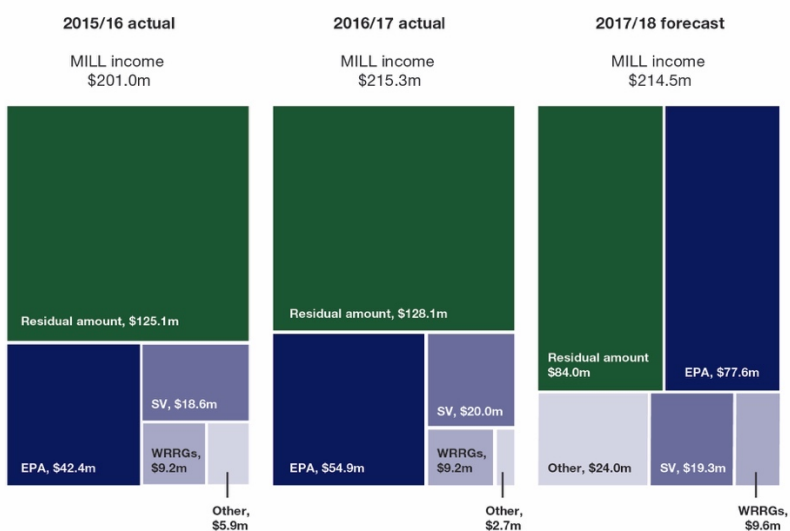
²³ "The value of a fee unit is set by the Victorian treasurer each year" - [Victoria EPA](#).

Figure 2.6 Allocation of Levy Funds Across Agencies and the Sustainability Fund

Flows from the MILL into the Sustainability Fund



MILL Trust Account distribution

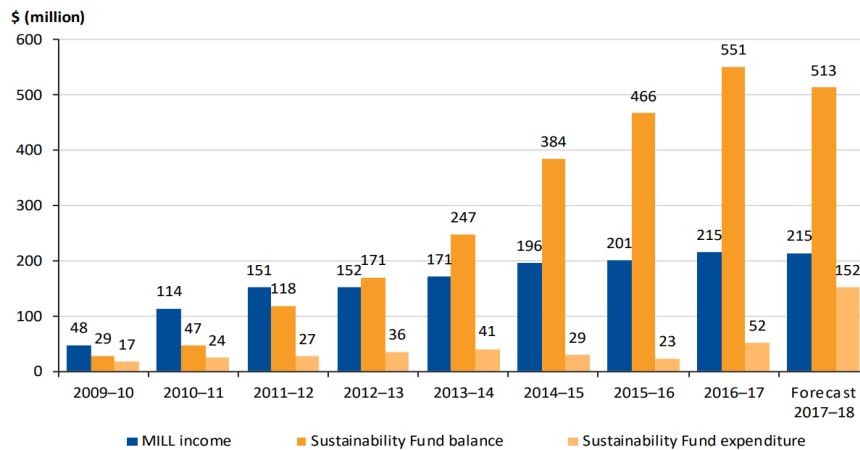


Note: The increase in EPA's distribution from 2016–17 to 2017–18 was a direct result of EPA reform funding initiatives. The amounts above are shown on an accruals basis. Amounts shown in Figures 1G and 1I differ as they are shown on a cash accounting basis. Source: VAGO based on DELWP data.

As shown in Figure 2.7 below the balance of the Sustainability Fund at the 31 December 2017 had grown to \$562 million. The Department of Environment Land and Water Protection expects this to be \$513 million by 30 June 2018. The majority of expenditure from the Sustainability Fund has been on activities to reduce greenhouse gas emissions and address climate change.

Figure 2.7 MILL income compared to Sustainability Fund expenditure and balance

Figure A
MILL income compared with fund growth



Source: VAGO.

2.3.4 2018-19 Estimated Victorian levies raised and hypothecated to waste and recycling activities.

The Municipal and Industrial Landfill Levy (MILL) raised an estimated \$215 million in 2018-19. Unfortunately, determining how much of these funds were allocated to the waste and recycling activities for the same year was not possible.

However, for 2017-18 based on annual reports the MILL was distributed as outlined in Table 2.11 below. Approximately \$106.5 million or 49.5% of levies raised was allocated to Government Agencies which contributed directly to the waste and recycling activities i.e. the EPA, Sustainability Victoria and Regional Waste Groups. A further \$35 million was allocated from the Sustainability Fund to waste projects.

Table 2.11 – 2017-18 Estimated Victorian levy hypothecation to waste and recycling activities

To whom	Estimated 2017-18 (\$ m)	%
State Government (EPA/SV/Regional Waste Groups)	~\$106.5	49.5%
Sustainability Fund - Waste Projects	\$35	16%
Total Hypothecation	\$141.5	66%
Sustainability Fund	\$73.5	34%
TOTAL LEVY RAISED	\$215	

2.3.5 2019-20 Estimated Victorian levy hypothecation to waste and recycling activities

The Victorian Government has forecast that the Municipal and Industrial Landfill Levy (MILL) will raise \$239.2 million in 2019-20 of which an estimated \$150 million (63%) will be spent on waste and recycling activities. See Table 2.12 for a breakdown of proposed allocations.

This includes the Victoria Government \$34.9 million package of recycling reforms in the 2019 budget²⁴;

- A key element of the package is a new \$14.3 million Recycling Industry Development Fund, to enhance Victoria's domestic remanufacturing capabilities. This funding will target secondary processing infrastructure for priority materials such as paper, cardboard and plastics.
- An additional \$13.8 million program will provide incentives for new entrants to the Victorian recycling market, diversifying the sector and leading to more investment in equipment and infrastructure upgrades.

Table 2.12 – 2019-20 Estimated Victorian levy hypothecation to waste and recycling activities

To whom	Estimated 2019-20 (\$ m)	Percentage
Local Government	\$23	9.6%
State Government (EPA/SV/Regional Waste Groups)	\$130	54%
Sustainability Fund - Waste Projects (industry, local govt, other)	\$20	8.3%
Total Hypothecation	\$170	72.4%
Sustainability Fund	\$66	27.6%
TOTAL LEVY RAISED	\$239	

2.4 South Australia

2.4.1 Legal framework and history

The Solid Waste Levy is raised under the *Environment Protection Act 1993*. The levy is collected by the Environment Protection Authority (EPA).

The waste levy was first introduced into South Australia for metropolitan landfills in 2003 and for regional landfills in 2007. Since that time, levies have been growing rapidly, and have risen in four distinct 'blocks'.

1. 2003 to 2007; when the levy was around \$10-11 per tonne.
2. 2008 to 2011; where it increased to around \$23-26 per tonne, following a step change in 2008.

²⁴ [Victorian Budget 19/20 Overview](#).

3. 2012 to 2015; where, after a step change in 2012, it has risen by an annual average of 14% per year to \$57 per tonne in 2017.
4. 2018-19 where the levy rose to \$100 per tonne in the metro area, and then \$110 per tonne from July 1 until Jan 1, 2020. From 1 Jan 2020 metro levies will be \$140 per tonne and regional \$70 per tonne.

Table 2.13 - South Australian levy legislation

Document	Summary	Further information
<i>Environment Protection Act 1993</i>	Provides the regulatory framework to protect South Australia's environment, including land, air and water and contain the provisions requiring a 'waste depot levy' to be paid. This legislation was the result of the streamlined integration of six Acts of Parliament and the abolition of the associated statutory authorities.	From the South Australian EPA
<i>Environment Protection Regulations 2009</i>	The regulations which contain the detailed provisions in relation to the application of the waste levy.	A SA guide to waste levy regulations (via the EPA).

South Australia's current waste strategy is [South Australia's Waste Strategy 2015-2020](#). The Strategy has three objectives:

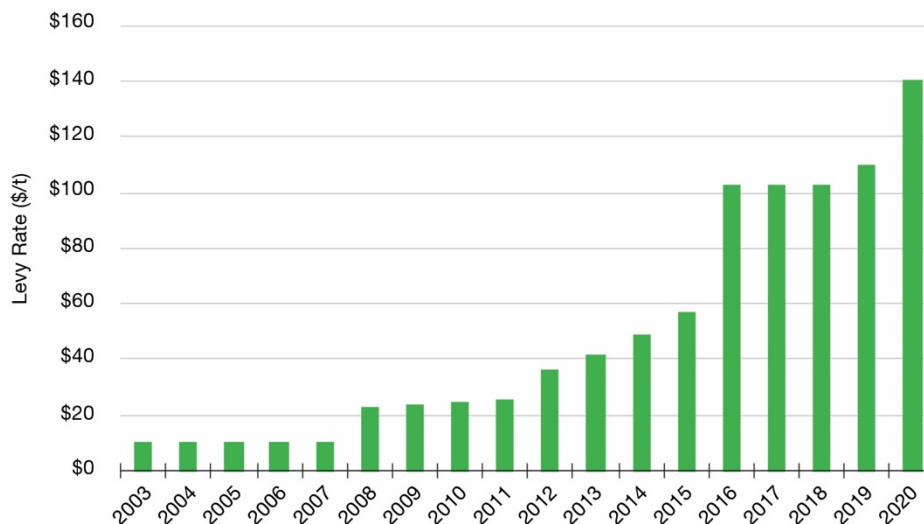
- A resource efficient economy where the best or full value is secured from products and materials produced, consumed and recovered across the State;
- A stable and efficient market for investors through a clear policy framework providing a solid platform for investment decisions;
- A culture enabling the South Australian community, businesses and institutions to continue and strengthen their role in implementing zero waste strategies and programs locally, nationally and internationally.

The South Australian and Victorian levy are similar in value and approach. The South Australian levy has likely raised between \$400 and \$500 million since inception.

The South Australian Government has described that since 2003, \$107 million has been spent from the Green Industry Fund on programs 'that have stimulated councils, businesses and the community to reduce, reuse, recycle and recover, thereby cutting the amount of waste going directly to landfill'.

Figure 2.8 – History of South Australian Levy rates

SOUTH AUSTRALIA – levy rate (\$/t) vs. year



2.4.2 Application of the levy and exemptions

South Australia does not impose differential [levies on different waste types](#). However, it does offer some exemptions and discounts as below.

- There is currently no levy payable on waste fill material (formerly called ‘clean fill’).
- South Australians pay a levy on liquid wastes.
- A levy deduction is available in South Australia for scrap metal operators.
- There is also a substantial levy deduction available for asbestos disposal.²⁵

2.4.3 Current and future levy rates

Table 2.14 – Summary of SA landfill levy rates 2019-20

Levy	2019-20 \$ per tonne)	Comments
Metro (Adelaide)	\$110 (July-Dec 2019) \$140 (Jan 2020)	Increasing from \$110 per tonne to \$140 in the second half of 2019.
Regional	\$70	Increasing from \$55 per tonne in the second half of 2019.

²⁵ Metropolitan Adelaide: \$31 per tonne - non-metropolitan Adelaide: \$15.50 per tonne.

2.4.4 Geographic application

South Australia divides levies into metro and rural, where the rural levy is half the metro levy.²⁶

2.4.5 2018-19 Estimated South Australian levies raised and hypothecated into waste and recycling activities

In 2018-2019 year, the waste levy was expected to raise in the order of \$50-\$60 million, however the SA Treasury does not publish official figures of levies raised.

Of the levies raised in South Australia, 50% goes to the Green Industry Fund, 50% remains with the EPA, of which 45% funds general EPA activities and functions and the remaining 5% allocated to the 'Environment Protection Fund' established under the *Environment Protection Act 1993*.

Of the collected funds transferred to the Green Industry Fund, \$18 million funded Green Industries SA (18-19), with the remainder at the discretion of the SA Minister. The Environment Protection Fund is used by the EPA to fund not waste specific activities including technical investigations and training, site/spill clean-up and litigation.

Table 2.15 – 2018-19 Estimated South Australian levy hypothecation to waste and recycling activities

To whom	Estimated 2018-19 (\$ m) ²⁷	%
SA EPA (45% to EPA, assumed half waste & recycling activities)	\$11.25	22.5%
Green Industries SA	\$25	50%
Total Hypothecation	\$36.25	84%
Environment Protection Fund	\$2.5	5%
SA EPA (45% to EPA, assumed half waste & recycling activities)	\$11.25	22.5
TOTAL LEVY RAISED	\$50	

2.4.6 2019-20 Estimated South Australia levies raised and hypothecated into waste and recycling activities

The solid waste levy in the metropolitan area on the 1 July 2019 increased to \$110 per tonne and will further increase to \$140 per tonne from 1 January 2020. These increases are estimated to raise an additional revenue of \$14.8 million resulting in around \$70 million raised in 2019-20. Note however, these are NWRIC estimates only and the actual revenue could vary up to 10% of the below values.

The 2019 South Australian budget²⁸ includes the '[Waste Modernisation and Transition Package](#)' of \$12m over four years.

²⁶ See [Waste Levy Guidelines](#) from the South Australian EPA.

²⁷ All values are approximate.

²⁸ [South Australian Budget overview 19-20](#).

- \$10 million to assist councils and the waste management industry to transition and modernise following changes to international market conditions.
- \$2 million will be provided to the Environment Protection Authority for compliance and audit activities and to review the container deposit scheme.

This is funded and administered by Green Industries South Australia.

Table 2.16 – 2019-20 Estimated South Australian levy hypothecation to waste and recycling activities

To whom	Estimated 2019-20 (\$ m) ²⁹	%
SA EPA (45% to EPA, assumed half waste & recycling activities)	\$15.75	22.5%
Green Industries SA	\$35	50%
Total Hypothecation	\$50.75	72.5%
Environment Protection Fund	\$3.5	5%
SA EPA (45% to EPA, assumed half waste & recycling activities)	\$15.75	22.5%
TOTAL LEVY RAISED	\$70	

2.5 Western Australia

2.5.1 Legal framework and History

The waste levy was first introduced in Western Australia in 1998, through the *Environmental Protection (Landfill) Levy Act 1998*.

In the Second Reading Speech of the Act, it was outlined that money raised through the levy was only to be used to fund programs approved by the Minister relating to the management, reduction, re-use, recycling, monitoring or measurement of waste and administering the Fund. It was stated the levy was not to be used to fund “normal ongoing operations of the Department”.

Local Government’s support of the levy was conditional on the understanding that funds generated would only be used within the bounds of these specified restrictions. The levy was set at \$3 per tonne for putrescible waste and \$1 per cubic metre for inert wastes.

The WA Waste Authority published a study by Ph.D student Paul Schollum in 2010, looking to calculate the socially optimal value of landfill levies based on covering the environmental ‘externalities’ they create. This value was estimated at \$32 per tonne across all streams (in 2010 dollars - equal to \$36.30 in [2016 dollars](#)).³⁰

The current State strategy is the [Waste Avoidance and Resource Recovery Strategy 2030](#). In regard to the levy, this strategy says:

²⁹ All values are approximate.

³⁰ The social optimum or the waste levy in WA - [available here](#).

“The waste levy will continue to play a key role by providing a disincentive to dispose of waste, and by generating revenue to fund programs which support the waste strategy. Reflecting this, a key foundation strategy is for the scope and application of the waste levy to be reviewed to ensure it meets the objectives of Waste Avoidance and Resource Recovery Strategy 2030, and to establish a schedule of future waste levy rates.”

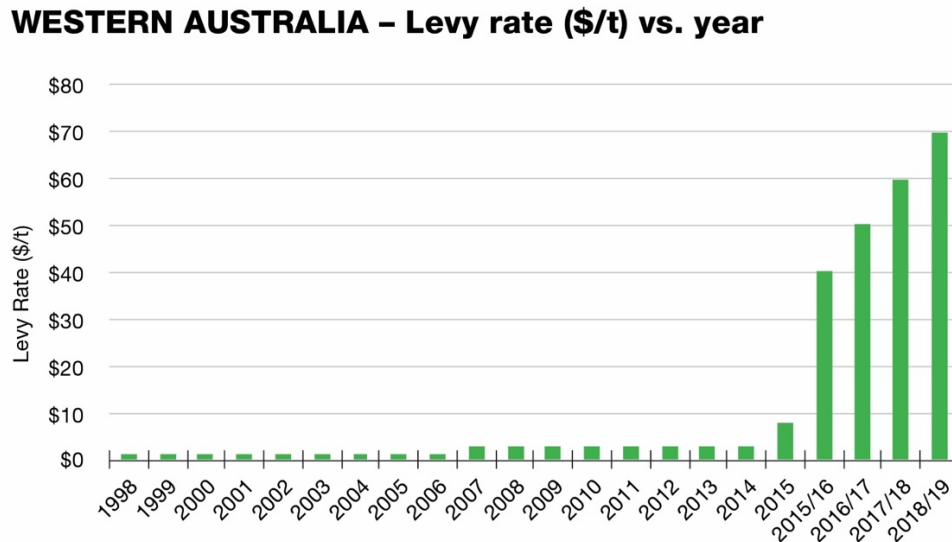
Table 2.17 - Western Australian Levy Legislation

Document	Summary	Further information
<i>Waste Avoidance and Resource Recovery Act 2007</i>	The Waste Avoidance and Resource Recovery Act 2007 (WARR Act) is the principal legislation for waste management in Western Australia. It was reviewed in October 2015. Establishes the Waste Avoidance and Resource Recovery Account and prescribes the ways in which monies in that account are to be applied.	From the WA Waste Authority
<i>Waste Avoidance and Resource Recovery Regulations 2008</i>	Explain the rules for the administration of the Waste Avoidance and Resource Recovery Act 2007 (WARR Act).	From the WA Waste Authority
<i>Waste Avoidance and Resource Recovery Levy Act 2007</i>	The legal framework behind the WA levy.	From the WA Waste Authority
<i>Waste Avoidance and Resource Recovery Levy Regulations 2008</i>	The regulations governing the administration of the levy.	From the WA Waste Authority

Unlike NSW, Victoria and South Australia, commercially significant levies are a relatively recent phenomenon in Western Australia. The West Australian levy has raised somewhere between \$300 and \$400 million since inception, with the vast majority of the capital in the last five years. WA Treasury provides a complete inventory of levies raised in the last decade.³¹

³¹ [Overview of State Taxes and Royalties 2018-19 - page 65.](#)

Figure 2.9 – History of Western Australian Levy rates



2.5.2 Application of the levy and exemptions

In WA levies are uniform across all streams. WA provides a number of [landfill levies exemptions](#). These include exemptions for materials which are used on site for construction and cover along with materials generated in a disaster.

2.5.3 Current and future levy rates

The 2019-20 [putrescible and inert waste](#) levy is \$70/tonne.

2.5.4 Geographic application

The waste levy in WA is metro wide.

2.5.5 2018-19 Estimated Western Australia levies raised and hypothecated to waste and recycling activities

In accordance with the *Waste Avoidance and Resource Recovery Act 2007* (WARR Act), each year the Minister for Environment must allocate not less than 25% of the forecast levy amount to the WARR Account.

In 2018-19 WA raised \$83m in landfill levy collections³² and paid \$22 million into the Waste Avoidance & Resource Recovery Account as shown in Table 2.17

³² [Overview of State Taxes and Royalties 2018-19 - page 65.](#)

Table 2.18 – Waste Avoidance & Resource Recovery Account 2018-19 & 2019-20

WASTE AVOIDANCE AND RESOURCE RECOVERY ACCOUNT			Table 5.14
	2018-19 \$m	2019-20 \$m	
<i>Balance at 1 July ^(a)</i>	39	39	
Receipts	22	22	
Payments	21	22	
Closing Balance	39	39	

(a) The closing balance of \$39 million at 30 June 2018 (opening balance at 1 July) has been restated from the \$38 million reported in the 2017-18 *Annual Report on State Finances*, reflecting adjustment to the rounding of the closing balance at that time.

Note: Columns may not add due to rounding.

Therefore, based on \$22 million being paid into the WARR Account it is assumed the levy receipts in WA were approximately \$88 million in the 2018-19 and 2019-20 respectively.

Table 2.19 - 2018-19 Estimated Western Australia levy hypothecation to waste and recycling Activities

To whom	Estimated 2018-19 (\$m)	%
Waste Avoidance & Resource Recovery Account	\$21	25%
Total Hypothecation	\$21	25%
General Revenue	\$67	75%
TOTAL LEVY RAISED	\$88	

2.5.6 2019-20 Estimated Western Australia levies raised and hypothecated into waste and recycling activities

It is estimated that \$88 million will be raised from the levy in 2019-20 of which \$22 million will be paid into the Waste Avoidance and Resource Recovery Account for investment into waste and recycling activities. The West Australian budget for 2019 also includes an allocation of \$4.44 million to begin implementing the McGowan Government's Container Deposit Scheme, which is expected to begin in 2020. It is unclear if this is additional allocation of levy funds or funded out of the \$22 million paid into the Waste Avoidance and Resource Recovery Account.

Table 2.20 - 2019-20 Estimated Western Australia levy raised and hypothecated to waste and recycling activities

To whom	Estimated 2019-20 (\$m)	%
Waste Avoidance & Resource Recovery Account	\$22	25%
Total Hypothecation	\$22	25%
General Revenue	\$66	75%
TOTAL LEVY RAISED	\$88	

2.6 Other jurisdictions

2.6.2 Australian Capital Territory

The ACT government is currently considering introducing a levy by 2021.

2.6.1 Tasmania

The Tasmanian State Government is considering a waste levy as part of its 2019 *Draft Waste Action Plan*. No details of this proposal have been released.

2.6.2 Northern Territory

No waste levies are applied in the Northern Territory. Neither has the territory government proposed or opposed (on record) the implementation of a commercial levy.

3. Benefits of levies and opportunities for reform

3.1 Benefits

3.1.1 Increased resource recovery and reduced environmental impact of waste

Throughout Australia, levies have funded a vast array of activities that have aided the development of better waste management and resource recovery practices. This has included support for state and local governments to implement waste regulatory and compliance programs, community education, clean up and remediation of legacy waste stockpiles and poorly managed landfills. As well as co-fund infrastructure development with the private sector.

3.2.1 Increased competitiveness of resource recovery over landfill

The use of landfill levies has also enabled the development of commercial recycling businesses including material recycling facilities, alternative waste treatment plants and construction and demolition recycling. High levies have also enabled resource recovery activities such as fuel manufacture and energy recovery from waste materials. Without levies, these activities would not be commercially competitive against landfill. A reduction in levy prices would result in a number of recycling businesses no longer being commercially viable.

3.2 Opportunities for reform

3.2.1 Disharmonious levies drive levy avoidance and unnecessary waste movement

In a commercial market, organisations (private and local government) providing waste collection services will dispose of material at the lowest cost legal disposal point. This process is necessary to remain commercially competitive and to keep council rates down.

Unfortunately, the current differential in levies, between regions and States (see Table 3.1), has created artificially cheap and expensive landfill costs. This has resulted in the development of a levy avoidance industry where waste, some of which could be recovered is transported by truck and rail to cheaper landfills rather than being recycled.

The single largest example of this behaviour is between metro Sydney and South East Queensland, where more than one million tonnes per year of material has been flowing since the Queensland landfill levy was repealed in 2011. The implementation of a new levy in Queensland is believed to be having some impact, but will not stop, this material flow.

While the movement of waste from Sydney to south east Queensland is the single largest flow of waste to avoid or reduce levy costs, there are many other small examples of similar price differentials within and across State borders. Table 3.1 lists ten potential waste movements ranked from most to least profitable on the eastern half of Australia. These examples show where it would be profitable to move waste to areas of reduced or no levies, assuming landfills charge a similar gate price. All examples are legal waste movements, and all are interstate. This analysis does not assess whether landfill airspace is available in the final destination. The table also uses municipal waste levies only, for example it does not assess Prescribed Industrial Waste (Victoria) or other variable levies.

Table 3.1 - Potential waste movement due to differential levies in eastern Australia

	Sample Scenario	Levy differential	Distance (km)	Interstate transfer
1	Echuca to Moama	\$51.50	10	VIC to NSW
2	Sydney to Canberra ³³	\$143.60	300	NSW to ACT
3	Byron Bay to Stanthorpe	\$81.30	250	NSW to QLD
4	Melbourne to Moama	\$64.20	220	VIC to NSW
5	Brisbane to Tenterfield	\$75.00	275	QLD to NSW
6	Sydney to Stanthorpe	\$143.60	720	NSW to Qld
7	Melbourne to Albury	\$64.20	330	VIC to NSW
8	Sydney to Wangaratta	\$108.98	620	NSW to VIC
9	Adelaide to Wentworth	\$70.78	420	SA to VIC
10	Sydney to Brisbane	\$66.20	920	NSW to QLD

A similar situation exists in Western Australia where construction and demolition waste in particular is being transported outside of the levy region.

There are a number of possible ways to prevent this problem; minimise price differentials between levies by adjusting levy prices to a point where it is not commercially advantageous; apply the levy proximity principle and/or apply the “levy portability” principle across State borders. This means that waste levies are charged based on where the waste is generated, rather than where it is put into landfill. Even if transported interstate.

Levy portability already applies in relation to the movement of waste within NSW and Queensland. However, in order for this solution to be effective, it must be applied at a national level. In this example, waste would either need to be remitted to the host state or the state of origin based on a reciprocal agreement between States or would be levied at the higher rate of the generating State in the receiving State.

3.2.2 Comparison of levies on waste types, discounts and exemptions

Across states, there is a varied approach as to what material receives a levy discount or exemption. Most notable of these are the much higher hazardous waste levies in Victoria and Queensland, along with the choice by NSW and SA to impose liquid waste levies, which are absent in other States.

³³ In addition, Canberra to Woodlawn, which is not described here is 71km in distance.

Table 3.2 – Comparison of waste type levies, discounts and exemptions

	Differential levy for hazardous waste?	Daily cover exemptions	Reduced levy for residuals?	Liquid waste levy	Differential levy for local councils and businesses?
NSW	No	Yes ³⁴	Scrap only	Yes	No
Victoria	Yes	Yes	No	No	No
Queensland	Yes	No	Many	No	Effective ³⁵
South Australia	No	No	Scrap only	Yes	No
Western Australia	No	Yes	No	No	No

Differentiating levies by waste type can create an incentive for fraud by mislabelling waste. For example, Victoria's new Environmental Regulations now specifically prohibit the dilution of waste to reach a lower hazard category.

High levies placed on hazardous materials can create a disincentive for appropriate disposal and can create unnecessary interstate transport to avoid high disposal costs.^[3] Levies on asbestos can discourage its appropriate disposal and result in it being dumped or blended into loads.

Only some states put in place a liquid waste levy, and it is not clear if this levy encourages a resource recovery or waste reduction outcome.

Levy deductions are not universally available for daily cover. Daily cover is an important practice to ensure high quality landfill management. A reduced cost may assist and improve the management of some landfill sites.

3.2.3 The impact of levies on the competitiveness of recycling exports

Levies are an effective regulatory tool to stimulate recycling when the cost of recycling is lower than the cost of landfill, there is a stable market for the recyclate, and businesses have appropriate and long-term sites to process the materials.

The total value of a recycling process can be expressed in simple terms as;

$$\text{Economic value of recycling} \quad (\$/t) = ([VR] \times [R]) - ([1-R] \times [Dr])$$

VR = Average value of recovered materials; \$/t. R = Proportion of recyclable materials; 0 to 1. Dr = Disposal cost of residuals; \$/t.

³⁴ Implemented May 2019, as recycled fines with a 75% levy deduction.

³⁵ As Local Governments in Queensland receive 105% of the levy as a rebate, local government owned or operated waste collection receives an 'effective' exemption on the levy.

Unfortunately, due to changing market conditions overseas, the average value of recovered materials (VR) such as the price of metals, plastics and paper, have been declining. Combine this with reduction in the proportion of recyclable materials, due to increased contamination, and increasing costs to dispose of residuals (Dr) the net economic value of recycling is dropping significantly and reducing the commercial viability of many recycling businesses.

This is especially true in the scrap metals market, where in the last two decades, the proportion of metal in motor vehicles and white goods has reduced significantly being replaced with lighter, but less recyclable plastic parts. This non-recyclable residual, known as shredder floc, can be as high as 40% of the weight of a vehicle.

Further, Australian scrap businesses compete with international scrap deals where the disposal cost is much lower, reducing the competitiveness of their exports. Without a competitive local production environment, metal shredding may move offshore with whole cars being exported for processing.

3.2.4 Ineffective levy administration

There are a number of anomalies in how the levy is collected and administered in each jurisdiction. This includes where the levy liability is incurred. In NSW levy liability goes beyond landfills to operators of all facilities required to hold a licence to recycle, process or store waste. In other states the liability is restricted to the landfill.

Another concern is the payment period for levy remittance to State Government is often shorter than the payment terms from customers. It also differs from 21 days to 28 days in some states, or even longer in other states. This places significant cash management issues on operators.

There is also no provision for the large transaction costs incurred by landfill operators to collect and administer the levy payments. Likewise, levies still apply to bad debts.

3.2.5 Distortionary levy hypothecation

Distortionary levy hypothecation occurs when the method of levy hypothecation gives one market competitor an advantage over another. Examples include providing grants to companies based on specific activities, such as recycling one material type. Industry suggest the best way to hypothecate levy money to the market is via initiatives carefully designed to not distort the market.

Subsidising local government owned recycling or waste businesses with levy receipts can also deter private sector investment into these assets. Without private sector investment into new waste and recycling infrastructure, the transition to a circular economy will be greatly slowed or stopped.

4. Recommendations

The NWRIC recommends the following reforms to enhance the benefits and reduce the negative impacts of levies across Australia.

4.1 Develop a National Levy Pricing Strategy through COAG to prevent levy avoidance and ensure local and international competitiveness of the resource recovery sector

Facilitated by the COAG process, States and Territories need to set levies relative to each other to encourage resource recovery and the safe disposal of hazardous wastes. The levies should be structured in a manner that does not encourage the development of a levy avoidance industry as has happened in NSW, Queensland and WA due to the significant price differentials between regions and states.

In developing the pricing strategy, current levies should not be reduced as this will have a negative impact on existing waste and recycling commercial businesses.

The pricing strategy should also take into consideration the provision where appropriate of levy discounts on recycling residuals and/or recycling rebates on recovered materials that meet agreed specifications. Specifically, for the scrap metal shredding industry where due to the increasing proportion of plastics in cars and white goods, the ability to compete on the international commodity market is significantly reduced and could result in the exporting of whole cars for processing.

The NWRIC recommends that any levy discount on recycling residual or recycling rebate on recovered materials be applied consistently across all states; that a levy discount on recycling residuals or recycling rebates on recovered materials only applied where there are agreed recycling performance requirements or recovered material specifications; that a levy discount on recycling residuals or recycling rebate on recovered materials should only be made available to those recycling activities that are either at a genuine competitive disadvantage, or where landfill disposal is the only disposal option for the residual generated from current best recycling practice, or where the recovered material is more expensive than the virgin material it is substituting.

Where possible recycling rebates on recovered materials should be funded by an extended producer responsibility scheme rather than the waste levy, as in the case of the Oil Stewardship Scheme.

4.2 Develop National Waste Levy Protocols that ensure consistency across states and territories in the following areas

- Definitions for which waste is and isn't levied (e.g. solid, liquid, prescribed and hazardous).
- Where the liability for the levy sits i.e. at the point of generation and is portable across regions and jurisdictions.
- How far waste can be moved (i.e. proximity within or across jurisdictions) including the tracking and reporting on the movement of waste.
- How the levy is collected and administered by operators on behalf of governments including daily cover discounts, the payment period for levy remittance, levy on bad debts and recovery of transactional costs transactional costs for administering levy payments.

4.3 More transparency and accountability by jurisdictions how much levies are raised, how they are spent and annual reporting

With anywhere between 10% to 75% of levy funds invested back into activities to improve waste management and resource recovery there is an urgent need for jurisdictions to be more transparent on how much levy funds are collected and how they are spent each year.

Specifically, the NWRIC recommends that each jurisdiction should;

- maintain a separate waste levy trust account from which all levies collected are managed, similar to Victoria's Municipal and Industrial Levy Trust Account where all levies are retained;
- the Trust Account should have clear rules on how the funds are to be allocated and reported on including objectives that link to the State's waste avoidance, resource recovery and circular economy strategies and plans,
- levies raised are only invested in activities consistent with the Trust Account's rules and objectives,
- guaranteeing a minimum percentage of levies (the NWRIC suggests 50%) be spent annually on activities to implement the jurisdiction's waste avoidance and resource recovery strategies, resource recovery and remanufacturing industry development plans, market development initiatives and infrastructure plans;
- as a minimum each jurisdiction should make funds available to;
 - government departments for waste compliance and education activities,
 - local government for compliance, education, waste reduction and resource recovery activities, and
 - the private sector to advance development of infrastructure, resource recovery and safe treatment and disposal of hazardous materials.
- contribute up to 1% of annual collections to a National Resource Recovery / Product Stewardship Fund that must be matched by the Commonwealth.

The purpose of the fund would be to;

- develop, regulate and ensure compliance of national product stewardship schemes;
 - coordinate and monitor the implementation of the national waste policy including facilitating ongoing collaboration across state, territory and local governments, and the waste and recycling sector;
 - coordinate and monitor the implementation of the national food waste strategy,
 - prepare the national waste report and national accounts
- report annually on the total amount of levy funds collected and spent (including non-waste and recycling related expenditure) and outcomes achieved.

Time to get Australia's Product Stewardship Back on Track

31 October 2019

Product stewardship is an effective way to deliver cost effective solutions that minimise the impact of products, goods and materials on the environment and human health. Product stewardship is also an important tool that can drive resource recovery and the circular economy in Australia.

What exactly is product stewardship? Simply producers take responsibility to minimise the human health and environmental impacts of their products throughout their complete life cycle.

From designing out waste to recycling at the end of life and everything in between. Producers, manufacturers, brands and/or retailers take the primary responsibility and work with their supply chains (upstream and downstream) and customers to minimise harm to human health and the environment.

Product stewardship has been part of Australia's regulatory framework since the late 1990's. However, it has had a very stop and start history due to inconsistent government willingness to put in place the necessary regulatory and policy frameworks essential to make producer responsibility possible.

From 1998 through to 2001 there was a flurry of regulatory and voluntary activity with the establishment of the Used Packaging National Environment Protection Measure in 1998 and the Product Stewardship (Oil) Act in 2000.

At the same time industry led voluntary schemes for mobile phones (MobileMuster) and farm chemical containers (DrumMuster) kicked off. Meanwhile, various pilot take-back projects started for select IT equipment and televisions. As part of its 2001 Waste Avoidance and Resource Recovery Act, the NSW Government introduced a provision to establish extended producer responsibility (EPR) schemes in NSW.

However, for the next decade little progress was made in addressing the growing impacts of products on the environment due to governments' ongoing preference for voluntary, industry-led product stewardship programs.

Fortunately, in 2011 the Federal Government took the lead, stepped up and introduced the Product Stewardship Act, which is a robust piece of legislation that provides a framework for government and industry to reduce the impacts of products on the environment and society.

The first suite of products to be addressed under the Act were televisions, computers, printers and accessories. Within 12 months the Product Stewardship (Television and Computers) Regulation was passed establishing the National Television and Computer Recycling Scheme (NTCRS) requiring all companies who import or manufacture these products in Australia to provide free, reasonable accessible collection services, achieve agreed collection and recovery targets.

The result, within five years collection rates jumped from 18% (under sporadic voluntary programs) to 60%. Australia's e-waste collection and recycling capacity increased, creating jobs and revenue for Australia at minimal cost to local councils, state or federal governments. Not to mention hundreds of thousands of tonnes of electronic waste being diverted from landfills. With more than 90% of the materials recovered to an Australian Standard for reuse.

Unfortunately, though, the impetus government for smart, cost effective regulation to create a level playing field for producers was short lived. As eight years on all we have is a suite of poor performing, partly industry funded, voluntary schemes for tyres, paint, printer cartridges, and mattresses.

Plus, we still don't have any form of producer responsibility scheme for batteries, other electronics or photovoltaics. Even though these products have been on the product priority list for up to six years.

But fingers crossed, with the new Federal Government's election commitment of \$20 million for product stewardship the tide is changing. However, we have yet to hear from the government as to how it will these funds will be invested. Let alone what the outcomes from the Product Stewardship Act Review are, which was initiated way back in 2017.

So, here are a few suggestions to help them get things moving.

Time to get Australia's Product Stewardship Back on Track

31 October 2019

Objects of the Act

Do not change the objects of the Act. They are fine. Just get on and implement them.

Using regulation effectively and efficiently

Free riding is the biggest barrier to getting producer stewardship schemes up and running. To solve this problem, amend the Act so that when a product is placed on the priority list all organisations who put those products in to the Australia market must either:

1. Register and establish a voluntary accredited scheme either as part of the government's process or on their own within a given timeframe, or
2. Be a member of an existing accredited voluntary scheme.

If not, they will be required to pay an agreed advance recycling fee for each unit placed on the market to the Product Stewardship Fund, which will be used to support local and state government activity in recovering and dealing with the product.

To ensure the APCO packaging targets are met within the required timeframes, establish a regulation under the Act that replaces the Used Packaging NEPM and call out these targets, with penalties similar to the NTCRS for failure to meet the targets.

Getting the priorities right

Batteries and photovoltaics, given the diversity of both these industries free rider regulation needs to be put in place. A voluntary approach will not work. Therefore, resources should be applied to establish the necessary regulations under the Act and assist the industry in getting these two schemes up and running by the end of 2020.

Expand the scope of the NTCRS to include all electronics. The ACT, SA and Victoria have all banned e-waste from landfills. This means the cost of collecting and processing these products is unfairly being borne by local councils and state governments rather than the producers and users.

Making Voluntary Accreditation Meaningful

Amend the voluntary accreditation system to a three-tiered approach:

Tier 1 - companies register to develop a voluntary scheme within 12 months that includes a three-year product stewardship business plan.

Tier 2 - companies apply for accreditation by submitting a three-year product stewardship business plan.

Tier 3 – companies apply for renewal of accreditation by submitting a five- year product stewardship business plan.

At each Tier the Federal Government will provide funding (on a dollar for dollar basis) and/or in-kind resources for any of the following activities - material flow analysis, risk assessment, cost sharing agreements, market development, communications, governance compliance requirements, industry and stakeholder engagement, business planning assistance. As well as government accreditation and access to product stewardship logo.

The first priority would be to have the current suite of voluntary programs for tyres (TSA), paint (Paint Back), farm chemical drums (DrumMuster, ChemClear), printer cartridges (Cartridges for Planet Ark), soft plastics (Redcycle) become accredited. Why? To increase industry participation, improve performance and transparency and to promote them to the community.

Time to get Australia's Product Stewardship Back on Track

31 October 2019

The second priority would be to encourage other companies and industries to apply to become accredited through direct approaches and greater engagement with industry.

Conclusion

It's time for the new Minister for Environment and Energy and her Assistant Minister for Waste Reduction and Environmental Management to turn their election promises into action. It's also time for state and territory governments to get behind the federal government's product stewardship commitment by contributing matching dollars to the National Product Stewardship Fund.

If the federal government doesn't get going soon waste will continue to be exported. Landfills will fill up with products that leach potentially harmful substances. Stockpiles and risk of fires will continue to grow due to lack of markets and infrastructure to process products. Batteries will continue to contaminate kerbside bins, causing explosions and fires, putting recyclers and infrastructure at risk. Potentially recyclable, rare and valuable resources will be lost.