POLICY INCENTIVES TO SUPPORT RECYCLING MARKETS IN AUSTRALIA

Discussion Paper prepared for the Australian Council of Recycling

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EXECUTIVE SUMMARY

- Responding to community concerns, there is growing momentum from governments to drive change in the way Australia reduces its waste and fosters a greater uptake of recycling.
- Despite the goodwill and the policy commitments from all levels of government, the reality is that Australia is a long way off achieving the ambitious recycling targets it has set itself, especially for plastics recycling.
- To achieve these targets bold new thinking will be needed that extends beyond the current suite of policies envisaged. Additional policies recommended include:
 - the establishment of formal mechanisms to improve data and measurement of recycling outcomes, and 'chain of custody' arrangements for recovered materials;
 - consideration of a new '*Plastics Reduction Offset Scheme*' to incentivise the greater usage of recovered materials in the plastics industry; and
 - further reform of waste levy arrangements to address market inefficiencies associated with the disposal of residual waste from legitimate recycling operations.

Challenges in meeting ambitious recycling targets

Australian governments have agreed to a National Waste Policy, with ambitious targets for improved waste management and recycling, consistent with the principles of a circular economy.

- Recognising the particular challenges that come with packaging waste, separate targets have been set including that 70 per cent of Australia's plastic packaging waste will be recycled or composted by 2025. In 2017-18, however, only 16 per cent of plastic packaging was recycled.
- A key part of the National Waste Action Plan is to find ways of using recycled materials productively. Yet again, estimates suggest that due to a range of factors the value of the market for recovered materials in Australia has fallen by an estimated 40 per cent since 2015-16.

Policies to incentivise better waste management and recycling

- Market failures and negative externalities are particularly significant in the waste sector. There is a well-established range of policy instruments that can help address this, including through taxes; the imposition of fees and charges; direct subsidies and tradable offset schemes.
- In an ideal world, prices for waste disposal, virgin material and manufactured goods should reflect the full costs involved, including environmental and social externalities.
- Full internalisation of externalities would lead to price differentials between secondary and primary materials, with recovered materials recyclate having a reduced price compared with primary materials.

Promoting end markets for recyclable materials

- Through the National Waste Policy Acton Plan, a number of policy actions are aimed at building demand and markets for recycled materials and products.
- Policies to incentivise the uptake of recovered materials need to be supported by a framework that can identify in a credible and verifiable manner the amount of recovered material used as an input into other final products.
- A type of 'chain of custody' arrangement is essential so that recovered materials can be traced through the production process. This would build on the Voluntary Recyclers' Accreditation program being developed by the Australian Council of Recycling.

Differential tax treatment to support recycling

- Studies have suggested that differentiated value added tax (VAT) rates can be used to give advantage to recycled materials relative to primary materials, or to second-hand recycled goods. The research is mixed, however, as to the effectiveness of such policies.
- The design features of Australia's GST intended to ensure that only sales to final consumers generate a tax liability, as well as the availability of input tax credits for GST paid on inputs to the production process - mean that lowering the tax rate on recovered materials inputs, in itself, will be unlikely to bring about significant behavioural responses within the supply chain.

- Likewise, the GST treatment for taxing second-hand good has been well established for twenty years. In line with the treatment of new goods, sales of used goods are subject to GST (i.e., taxable) if sold by a business, but not if sold by a private individual.
- In the current political climate, there is unlikely to be political appetite for changes to the GST as a policy mechanism to better support recycling outcomes.

A Plastics Reduction Offset Scheme

- Given the imperative of improving Australia's recycling performance in relation to plastics, the establishment of a *Plastics Reduction Offset Scheme* should be considered.
- Materials-based targets for the use of recycled content should be set and supplemented by a flexible implementation mechanism in the form of a tradable offsets scheme (with certificates or credits issued for use of recovered materials).
- Under this arrangement, once an overall target is established for the recycled content of
 production, individual manufacturers who are using a higher level of recycled content
 than specified by the standard, would generate 'offsets' which could be sold to others.
 The purchaser of the offsets would be entitled to use these credits as evidence of
 contributions towards meeting their targets.
- Few restrictions would be placed on who could generate the offsets or to whom they could be sold, and manufacturers would be able to trade offsets with each other. The offsets would be expected to achieve a value in the market that was linked to the marginal additional cost of integrating recycled content into production (i.e., the cost differential between virgin material and recyclate).
- Over time, the increased demand would be expected to make the recovered material more cost competitive and the value of the certificates (and therefore cost to government) would decline.

Further reform of landfill waste levies

 Waste and landfill levies play an important role in helping to manage waste and also generate significant revenues for the states. However, there are concerns over a lack of transparency in how such funds are raised, how and where they are invested in waste and recycling activities, and the effectiveness of the investment in supporting waste and recycling strategies and targets.

- In the last two years, it is estimated that \$2.67 billion was raised in revenue from waste levy rates in Australia. In that period \$225 million in grants were made or pledged by governments to recycling infrastructure or reprocessing-related initiatives. This represents only 8 per cent of collected waste levies.
- A Victorian Auditor-General's report on that state's Municipal and Industrial Landfill Levy found that since 2005, approximately \$1.7 billion has been collected through the levy, but that over many years, a significant proportion of funds have remained unspent. The balance of Victoria's sustainability fund was projected to be in excess of \$500 million as at June 2018.
- It is recognised that resource recovery facilities cannot always recycle the full amount of waste throughput at their sites. There is always a residual component of waste that cannot be recycled - due to either contamination or the fact that there are few established alternatives for some recycling by-products, such as shedder floc - and this residual waste needs to be sent to landfill.
 - Of the 21.7 million tonnes of waste sent to landfill, conservative estimates suggest that around 1.3 million tonnes could comprise residual waste from recycling operations.
 - Using weighted average levy rates, this suggests that some \$120 million per year in landfill levy revenue is generated from fees imposed on residual recycling waste.
- The imposition of such levies on residual waste from legitimate recycling operations imposes significant cost imposts on recyclers, and companies that are being proactive and investing considerable capital into recycling facilities should not be penalised.
- As part of the process of harmonising arrangements for land fill levies, all states should follow Queensland's example and provide a 50 per cent levy discount for waste residuals created by the legitimate resource recovery activities of recycling companies.
- This policy is expected to come at an estimated cost of around \$50 million to \$80 million per annum in foregone levy proceeds to the states.
- Given current budgetary outlooks, states may be reluctant to agree to this. However, recognising the national interest considerations in supporting the recycling industry, the Commonwealth, as part of a 'grand bargain' could contribute to replacing this lost revenue with direct payments to the states.

• In doing so, the Commonwealth would attach conditions on these payments that would address the other major problem - being insufficient hypothecation of landfill levy proceeds toward measures that help meet waste management goals.

RECOMMENDATIONS

In a post-covid world, the Federal Government has signalled an intention to pursue a bold reform agenda. In recent weeks, it made new announcements to establish a Recycling Modernisation Fund as well as improvements to Australia's product stewardship arrangements, recognising that an unparalleled expansion of Australia's recycling capacity is needed.

Despite this, to achieve agreed waste management and recycling targets, bold new thinking will be needed that extends beyond the current suite of policies envisaged. Results matter more than good intentions. Additional policy options are therefore needed that can shape incentives and address market failure, and set the waste management and recycling industries on a surer footing so the trajectories that have been established have a better chance of being met.

Recommended options include:

- 1. the establishment of formal mechanisms to improve data and measurement of recycling outcomes, and 'chain of custody' arrangements for recovered materials;
- 2. consideration of a new 'Plastics Reduction Offset Scheme' to incentivise the greater usage of recovered materials in the plastics industry; and
- 3. further reform of waste levy arrangements to address market inefficiencies associated with the disposal of residual waste from legitimate recycling operations.

While better management of waste is our collective responsibility, as a country we need to think harder about the way we take this forward.

Being open minded and smarter in our approach not only improves our chances of meeting the targets, but at the same time opens-up new and much needed opportunities in our manufacturing sector.

We can't afford to reach a crossroads where everything passes through, but nothing changes.

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DISCUSSION PAPER: POLICY INCENTIVES TO SUPPORT RECYCLING MARKETS IN AUSTRALIA

"Often when you think you're at the end of something, you're at the beginning of something else"

Fred Rogers

1. Introduction

There is growing momentum from governments to drive change in the way Australia reduces its waste and fosters a greater uptake of recycling.

This reflects growing community concerns about the environment, especially plastic pollution in our oceans and the need to reduce landfill. Waste and recycling issues are consistently raised by Australians as one of their top environmental concerns. At the same time, countries are having to better manage their own waste following changes to import standards globally, most notably through China's National Sword Policy.

The Prime Minister's March 2020 speech to the National Plastics Summit, reiterated the Commonwealth's ambition for Australia to take responsibility for its own waste – 'our waste, our responsibility'.

In recent years there has also been a coming together of all levels of government with commitments to help reduce the amount of waste generated and make it easier for products to be recycled. A National Waste Policy has been agreed, setting out ambitious targets for improved waste management and recycling results, consistent with the principles of a circular economy. State governments have also been formulating strategic waste plans of their own.

Despite the heightened focus of governments and considerable levels of goodwill to effect change, there are significant challenges to be overcome if expectations are to be met. As a country we need to think carefully about the way we take recycling and waste management forward.

The National Waste and Recycling Industry Council has noted, for example, that 'due to changing market conditions overseas ... combined with a reduction in the proportion of recyclable materials due to increased contamination and increasing costs to dispose of residuals, the net economic value of recycling is dropping significantly and reducing the commercial viability of many recycling businesses.'ⁱ

These circumstances highlight the imperative for policies to help address market failures and externalities in the generation and disposal of waste. Not only do we need to keep pushing harder, but we need better incentives to pull behaviour in the right direction.

In a post-covid world, the Federal Government has signalled an intention to pursue a bold reform agenda. In recent weeks, it made new announcements to establish a Recycling Modernisation Fund as well as improvements to Australia's product stewardship arrangements, recognising that an unparalleled expansion of Australia's recycling capacity is needed.

Notwithstanding the considerable goodwill and the new commitments from all levels of government, the reality is that Australia is a long way off achieving the recycling targets it has set itself, particularly in relation to the recycling of plastics.

To hit these targets bold new thinking will be needed that extends beyond the current suite of policies envisaged.

Against this background, this Discussion Paper provides a summary of the current state of play of waste management and recycling in Australia as well as the present stance of associated government policies.

It also discusses additional policy options that can shape incentives and address market failure, and set the waste management and recycling industries on a surer footing so the trajectories that have been established have a better chance of being met.

Recommended options include:

- the establishment of formal mechanisms to improve data and measurement of recycling outcomes, and 'chain of custody' arrangements for recovered materials;
- consideration of a new 'Tradeable Plastics Offset Program' to incentivise the greater usage of recovered materials in the plastics industry; and
- further reform of waste levy arrangements to address market inefficiencies associated with the disposal of residual waste from legitimate recycling operations.

While better management of waste is our collective responsibility, as a country we need to think harder about the way we take this forward. Being open minded and smarter in our approach not only improves our chances of meeting the targets, but at the same time opens up new and much needed opportunities in our manufacturing sector.

We can't afford to reach a crossroads where everything passes through, but nothing changes.

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2. Addressing externalities and market failure in the waste and recovery sector

2.1 Market failure

Market failure is a term that refers to situations in which markets will not achieve the best outcomes for the community. Market failures include negative and positive externalities, the supply of public goods, market power issues and imperfect information.

Negative externalities can be particularly significant in waste generation and disposal. They occur when a transaction between two parties has detrimental effects on third parties and is not reflected in the price paid for the product concerned.

Governments have long intervened in waste management for public health and amenity reasons and to overcome market failures. In the absence of intervention, households and firms will likely use less than ideal means of disposal, creating risks of dumping and littering.

Waste management policy has also become more attuned to broader issues concerning sustainability and conservation, while there are also growing expectations to hold producers responsible for the cost of disposing of products at the end of their life.

In an ideal world, prices for waste disposal, virgin material and manufactured goods should reflect the full costs involved, including environmental and social externalities. Full internalisation of externalities would lead to price differentials between secondary and primary materials, with recovered materials – recyclate - having a reduced price compared with primary materials.

2.2 Policies to overcome market failure and support the circular economy

There is a well-established suite of policy instruments that can help address market failure and support better waste and materials management. This includes economic instruments, regulatory instruments, extended producer responsibility requirements, government procurement policies, public information and awareness raising, monitoring and reporting, and enforcement and compliance.

Key types of economic instruments for waste management and the circular economy include:

- Taxes which increase the cost of polluting products or activities, and thereby discourage their consumption or production. In waste policy, they are used to internalise the environmental costs of waste treatment and disposal, making environmentally harmful treatment methods more costly and creating incentives to use alternative treatment methods such as recovery and recycling.
- Fees and charges are used to recover the costs of providing goods or services (including the costs of waste management) and can support the principle of user pays, helping to ensure the financial sustainability of waste management services. To the extent these

measures allow for the collection of revenue, it is important to understand how the revenue is used, as this can influence the incentives for waste reduction and responsible waste management.

- **Subsidies** can be used in environmental policy to directly or indirectly reduce the use of something that has a proven, negative effect on the environment and incentivise the use of a better alternative. In the waste sector, subsidies may be used to encourage better waste management, waste reduction or investments in improved waste management, and may take the form of direct subsidies or tax exemptions.
- **Tradable offest schemes** can be used to allocate rights and support circular economy objectives.

In recent years there has been growing acceptance of the need to reframe our thinking about waste as a resource and the potential it has to support a circular economy – one that aims to shift away from a typical cycle of 'make, use and dispose' in favour of a system that encourages as much re-use and recycling as possible.

The OECD has identified a number of business models that could support the transition to a more resource efficient and circular economyⁱⁱ. Each business model modifies the pattern of product and material flows through the economy. By doing so, they have the potential to reduce environmental pressures that result from current systems of production and consumption.

- **Circular supply models** replace traditional material inputs derived from virgin resources with renewable and recovered materials, which reduces demand for virgin resource extraction in the long run;
- **Resource recovery models** recycle waste into secondary raw materials, thereby diverting waste from final disposal, while also displacing the extraction and processing of virgin natural resources;
- **Product life extension models** extend the use-period of existing products, slow the flow of constituent materials through the economy, and reduce the rate of resource extraction and waste generation;
- **Sharing models** facilitate the sharing of under-utilised products, and can therefore reduce demand for new products and their embedded raw materials; and
- **Product service system models**, where services rather than products are marketed, improve incentives for green product design and more efficient product use, thereby promoting a more sparing use of natural resources.

Not all of these business models are necessarily new. As the OECD notes, what is new is the growing diversity and sophistication of these business models, as well as the range of sectors they are adopted in.

3. Waste and Recycling in Australia – current state of play

3.1 Overview

According to the 2018 National Waste Report, Australia generated an estimated 54 million tonnes of core waste in 2016-17, which was managed within the waste and recovery sector. Around a quarter of this waste comprised 'municipal solid waste' from households and local government activities, with the remainder from the 'commercial and industrial' and 'construction and demolition' sectors.

Of the 54 million tonnes of core waste, 21.7 million tonnes was deposited in landfill sites around the country, while an estimated 31.7 million tonnes was recycled. Nationally the resource recovery rate was 62 per cent and the recycling rate 58 per cent. By state, resource recovery and recycling rates were highest in South Australia and lowest in Queensland.

	Waste - millio	Recycling		
	Generated	to Landfill	Recycled	%
Municipal Solid Waste	13.8	7.4	6.3	45.7%
Commercial & Industrial	20.4	7.6	11.8	57.8%
Construction & Demolition	20.4	6.7	13.6	66.7%
Total	54.6	21.7	31.7	58.1%

TABLE 1: NATIONAL WASTE SITUATION

Source: Natonal Waste Report 2018

By material type, recycling is highest for metals (90 per cent) and masonry materials (72 per cent). The recycling rates for paper and cardboard, and glass are estimated to be 60 per cent and 57 per cent respectively, while for plastics the recycling rate was estimated at 12 per cent in 2016-17.

An estimated 4.3 million tonnes of waste material was exported for recycling in 2017-18, with exports concentrated in metals and cardboard and paper, and to a lesser extent plastics. At an aggregate (all country) level exports have generally held up in recent years.

In contrast, exports of waste material for recycling from Australia to China experienced a pronounced fall in 2017-18 as the impact of China's import restrictions took hold. Between 2016-17 and 2017-18 Australia's exports of waste material to China decreased by 40 per cent from an estimated 1.25 million tonnes to 0.75 million tonnes.

The National Waste Report suggests that waste material exports displaced from China mostly found other export destinations.

FIGURE 1: WASTE GENERATION AND MANAGEMENT



Source: National Waste Report 2018

FIGURE 2: EXPORTS OF WASTE



Source: National Waste Report 2018

3.2 Packaging Waste

Australian Packaging Covenant Organisation's 2019 Report (APCO) provided a baseline snapshot of packaging consumption and recovery data for Australia for the 2017-18 year.ⁱⁱⁱ The report shows that of the 5.45 million tonnes of packaging placed in the market, an estimated 2.67 million tonnes was recovered, accounting for 49 per cent.

Paper and cardboard has the highest recovery rate at 63 per cent, glass packaging 48 per cent and plastic packaging a comparatively low recovery rate of 16 per cent.



FIGURE 3: PACKAGING RECOVERY RATES

Source: APCO

For 2018-19, APCO estimated that the recycled content incorporated into packaging placed in the market was 1.9 million tonnes (35 per cent of total packaging). Of the remainder, preconsumer sources (e.g., manufacturing offcuts and scrap) accounted for an estimated 12 per cent, while virgin sources (primary feedstock) were estimated to account for 53 per cent of input.

The challenges surrounding plastic recycling are borne out with estimates of recycled plastic content in plastic packaging at less than 3 per cent.

FIGURE 4: PACKAGING RECYCLED CONTENT



3.3 Landfill and Waste Levies

Waste and landfill levies play an important role in shaping community behaviour as well as the commercial environment for waste and recycling businesses. Well-designed levies provide a disincentive for disposal of waste by landfill, and also an important source of funding for investment in waste and recycling management initiatives.

The National Waste and Recycling Industry Council (NWRIC) estimated that state landfill levies raised \$1.13 billion in revenue in 2018-19 and an estimated \$1.54 billion in revenue in 2019-20.^{iv}

State	Material to	Levy	Levy	Estimated Hypothecation	
	million tonnes	\$ per tonne	\$ m	\$ m	%
New South Wales	7.1	\$0 - \$143	771	154	19.9%
Victoria	4.2	\$31 - \$250	239	170	72.4%
Queensland	6.1	\$0 - \$155	443	343	77.0%
South Australia	0.7	\$55 - \$110	70	51	72.5%
Western Australia	2.4	\$0 - \$ 70	88	22	25.0%
Other	1.2				
Total	21.7		1541	569	36.9%

TABLE 2: SUMMARY OF WASTE LEVY RATES: 2019-20

* 2016-17

Source: White Paper Review of Waste Levies in Australia, NWRIC, Oct 2019

While waste and landfill levies generate significant revenues for the states, there are concerns over a lack of transparency in how such funds are raised, how and where they are invested in waste and recycling activities, and the effectiveness of the investment in supporting waste and recycling strategies and targets.

The NWRIC estimated that of the \$1.54 billion in funds raised through waste levy rates, only \$569 million (or 37 per cent) will be reinvested into activities relating to waste and recycling.

The Australian Council of Recycling has also released analysis of the extent to which the \$2.67 billion in waste levy revenue collected over the past two years has been reinvested by governments in specific recycling infrastructure and technologies.

This analysis found that over this period, around 240 recycling and resource recovery grants were made or pledged by governments, worth just under \$450 million. Of this, \$225 million was allocated to infrastructure-related or reprocessing-related initiatives. This represents around 8 per cent of the value of waste levies collected over the two-year period.^v

Jurisdiction	Industry Infrastructure Related \$ m	Other \$ m	TOTAL \$ m
New South Wales	50.8	135.1	185.9
Victoria	25.8	22.0	47.8
Queensland	22.0	12.0	34.0
South Australia	5.3	11.3	16.6
Western Australia	1.4	14.6	16.0
Commonwealth	120.0	25.8	145.8
Total	225.3	220.8	446.1
share of levies collected	8.4%	8.3%	16.7%

TABLE 3: GRANTS FOR WASTE & RECYCLING ACTIVITIES 2018 - 2019

Source: ACOR

In a similar vein, a 2018 review of Victoria's Municipal and Industrial Landfill Levy by the Auditor-General highlighted risks that levy proceeds are not always used for their intended purpose.^{vi} Levy proceeds in the state are used to fund core activities of environmental agencies with the balance being transferred to a sustainability fund.

The Auditor-General noted that since 2005, approximately \$1.7 billion has been collected through the levy, and that over many years, a significant proportion of funds have remained unspent over many years. The balance of the sustainability fund was projected to be \$513 million as at June 2018.

Distributions from the fund totalled just \$52 million in 2016-17, with spending commitments of \$152 million and \$32.7 million over the ensuing two years. The Auditor-General noted while budgeted expenditure had increased in recent years, the balance of the fund is predicted to remain high, with the government making no public commitment nor outlining a strategy or target to reduce the balance.

While the intent of landfill levies is to create a disincentive by putting a price on every tonne of waste going into landfill, and therefore to encourage resource recovery and recycling, they can be blunt instruments.

For example, South Australia which has historically imposed levies at a lower rate than New South Wales has nevertheless tended to achieve better waste diversion outcomes (an 82 per cent resource recovery rate compared with 62 per cent for NSW in 2016-17^{vii}).

In recent years there have also been concerns over differentials in levies across regions and between states, which have contributed to inefficiencies and deficiencies in Australia's waste management performance. As discussed in more detail in section 5.5 below, further concerns arise because landfill levies are imposed on the disposal of recycling residuals, which adds significant costs to the operations of recyclers.

3.4 Value of activities in the sector, including recovered materials

The 2018 National Waste Report cites work from the CIE which estimates that the value of activities in the Australian waste and resource recovery sector was \$15.5 billion in 2014-15.^{viii} Around 80 per cent of this (\$12.6 billion) comprised the provision of waste management and recovery services, with 20 per cent (\$2.9 billion) attributable to the sale of recovered materials. Some 50,000 people were employed in the sector.

The CIE noted that the value of sales of recovered materials had fallen by 37 per cent from 2009-10 to 2014-15 because of a drop in material prices. The report suggested that if material prices had remained at their 2009-10 levels, the value of sales of recovered materials would have been doubled, being around \$5.8 billion.

Latest data from the Australian Bureau of Statistics on the characteristics of Australian industry provide estimates on the value of waste management services up to 2018-19.^{ix} This is a narrower measure than used by the CIE, as it does not include spillover activities into other industries. Nonetheless, the ABS data suggests that total income generated by the waste collection and management sector grew by some 20 per cent between 2014-15 and 2018-19 (from \$12.5 billion to \$15.0 billion).

In 2018-19, some 4.3 billion tonnes of recycling waste was exported with an estimated value of 3.2 billion.^x

Recycled content is also a significant input into the supply chain for other parts of Australia's manufacturing base. This includes the *Pulp, paper and converted paper products* sector which employs more than 16,000 people and generated some \$10.6 billion in income in 2018-19, as

well as the *Fabricated metal product manufacturing* sector which generated almost \$34 billion of income.

Given that a central plank of Australia's National Waste Policy is to significantly increase the use of recycled content by governments and industry, it is instructive to get an update on the size of the market for recovered materials in Australia.

Given data limitations, however, obtaining a precise update is problematical. For illustrative purposes a 'hybrid estimate' of the size of this market has been derived by applying indicative spot prices for recycled commodities as at December 2019^{xi} to material-specific recovered product volumes from the 2018 National Waste Report.

This approach suggests that the value of the market for recovered materials in Australia in 2019 could have been in the order of \$1.7 billion.

Compared with estimates for previous years outlined by the CIE, this represents a fall of some 40 per cent from 2014-15, and a 67 per cent fall in the size of the market since 2010-11.

This trend highlights one of the key challenges the sector must contend with.



FIGURE 5: VALUE OF RECOVERED MATERIALS

Source: CIE, Author's estimate

4. Current Policy Stance of Australian Governments

All levels of government have a role to play in managing waste and in influencing the shift to the circular economy. Traditionally the Australian Government provided oversight to national waste policy and also administered product stewardship legislation and schemes. State governments have tended to set strategic policy directions and make laws and regulations regarding waste management, while local governments deliver waste and recycling services to households and some businesses.

4.1 National Waste Policy Action Plan

Governments at all levels remain highly attuned to public concerns about waste conservation and recycling and in 2018 through the Council of Australian Governments agreed to a collective, national approach. Through the new *National Waste Policy: Less waste, more resources,* a number of targets and actions were identified to establish a better path for recyclable waste in Australia, applying the principles of a circular economy.

Key targets set include that by 2030, waste generated in Australia will be reduced by 10 per cent per person; that an 80 per cent resource recovery rate will be achieved from all waste streams; and that the amount of organic waste sent to landfill will be reduced by half. The plan also includes targets to phase out unnecessary and problematic plastics by 2025 and more pressingly a ban on the export of various waste streams commencing in the second half of 2020. A critical target within the plan is the ambition to significantly increase the use of recycled content by governments and industry. There is also a target to make comprehensive economy-wide and timely data publicly available.

Some 80 actions have been identified as a means of progressing these seven targets within the National Waste Policy Action Plan. The actions are predominantly government-led and, in many instances, are expected to be delivered in partnership with the business sector and the waste and recovery industry.

The Action Plan notes that while *'improving the quality of our recyclable material is important; equally important is finding ways to use that material productively. If we don't increase demand for recyclables, the industry is not sustainable.'*^{xii} Accordingly, throughout the plan are a number of specific actions aimed at building demand and markets for recycled products, including:

- Action 1.5: Develop new markets for recycled products and materials;
- Action 3.18: Identify financial and other incentives that may assist key industries including the waste and recovery industry to transition to a more circular economy;
- Action 4.2: Partner with Infrastructure Australia, the Green Building Council and the Australian Institute of Quantity Surveyors to improve demand for recycled materials;

- Action 4.3: Work with industry to identify specific opportunities to increase uptake of recycled content in buildings and infrastructure with priority given to plastics, glass and rubber;
- Action 4.11: Identify financial and other incentives to assist businesses to design for and use greater volumes of recycled materials across their supply chains.

4.2 National Packaging Targets

Recognising the particular challenges that come with the management of packaging waste, all levels of Government came together in 2018 to establish a number of ambitious National Packaging Targets for 2025.

These targets include that: 100 per cent of packaging be reusable, recyclable or compostable; 70 per cent of plastic packaging being recycled or composted; 50 per cent average recycled content across all packaging; and the phase out of problematic and unnecessary single use plastic packaging.

As outlined in Section 3 above, there are substantial challenges to be overcome if these targets are to be met. In particular, for 2017-18 only 16 per cent of Australia's plastic packaging was recycled, against the 70 per cent target for this measure set for 2025.

4.3 Recycling Modernisation Fund

On 6 July 2020, the Commonwealth Government announced a \$190 million commitment to a new *Recycling Modernisation Fund* which, through co-funding with the industry and states and territories, is intended to generate \$600 million of recycling investment and drive an expanded capacity of Australia's waste and recycling sector.

In addition, the Commonwealth committed a further \$35 million to implement commitments under the National Waste Policy Action Plan. It also committed \$24 million to improve capabilities associated with waste data to better measure recycling outcomes and track progress against national waste targets.

Separately on 9 July, the Commonwealth released its response to the Review of the Product Stewardship Act which supported all 26 recommendations to improve product stewardship outcomes. A \$20 million Product Stewardship Investment Fund provides for grants of up to \$1 million to help ensure manufacturers, retailers and industry groups take greater responsibility for the entire lifecycle of the products they produce and sell.

4.4 The approach of the States

While signed up to the National Waste Plan, state governments are also implementing complementary policies of their own for waste and recycling. Most states are also developing dedicated plans for plastics.

New South Wales is currently developing a 20 year waste strategy intended to set the direction of the state's waste and resource recovery system consistent with the circular economy approach. The *Cleaning Up our Act* issues paper notes the state's waste levy is a key economic lever and is seeking views on the levy as well as complementary economic incentives including waste charges (such as 'pay-as-you-throw' initiatives and volume-based charging).

The Paper notes that historically one third of landfill levies have been returned to the environment portfolio to fund waste and recycling programs. The future allocation of levy proceeds is identified as a decision that could be informed by the 20 Year Waste Strategy.

The Issues Paper also considers options to help create end markets including recycled content in government procurement; standards for recycled content and materials; and measures to match suppliers with markets, for example by addressing information barriers. A Draft Strategy is scheduled for release later this year with a final report in early 2021.

Under its predecessor *Waste less, recycle more* initiative, some \$800 million was invested over nine years to help reduce waste impacts on the environment, while NSW's container deposit scheme has seen some three billion beverage containers returned for recycling.

In February 2020 **Recycling Victoria** released its \$300 million plan to reform the state's recycling system over the next decade to assist with the transition to a circular economy.

Amongst 26 actions are a proposed container deposit scheme, a commitment to fit-for-purpose landfill levies (with progressive increases in the landfill levy to bring it in line with other states as well as landfill levy auditing); and the establishment of a dedicated waste and recycling Act that will regulate waste as an essential service along with the establishment of a new Waste Authority from 2021.

Victoria's plan includes commitments to increasing the use of recycled materials through measures including a Recycling Markets Acceleration Package; a social procurement framework and an Industry and Infrastructure development package including a Recycling Victoria Infrastructure Fund.

Queensland's *Waste Management Resource Strategy* along with its *Resource Recovery Industries Road Map and Action Plan* released in 2019 set a number of strategic priorities to guide the state's transition to a more circular economy.

Queensland re-introduced its waste levy commencing in July 2019. Some 70 per cent of revenue from the levy is allocated to councils, industry programs and other environmental priorities. Associated regulations include important exemptions from the levy. In particular, waste residuals created by 'legitimate resource recovery activities receive a 50 per cent discount, provided the prescribed recycling efficiency is achieved.'^{xiii}

South Australia has typically taken a proactive approach to recycling and resource recovery and has led the states in its commitments to reducing waste. It is currently consulting on its *Vision for a Circular Economy: Waste Strategy 2020 – 2025*. It has set a vision to make the state a national centre-point for reuse, remanufacturing, recycling and composting. It sets new targets including a 75 per cent diversion target for municipal solid waste and identifies five priorities for action including food waste and plastics and packaging.

Western Australia has amongst the highest rates of per capita waste generation and the lowest rates of resource recovery in the country. Its *Closing the Loop: Waste Reforms for a Circular Economy* discussion paper released in February 2020 sets out directions to improve waste management in the state. It is reviewing its waste levy, while the state's container deposit system is scheduled to commence in October 2020.

Tasmania's *Draft Waste Action Plan* adopts the targets from the National Waste Policy Action Plan and includes commitments to a state-wide waste levy as well as a container refund scheme.

The **Australian Capital Territory** has committed to a range of initiatives both from the *ACT Waste Feasibility Study* and the National Waste Action Plan. The **Northern Territory** has also signed up to the National Waste Action Plan. Its container deposit scheme was been in place since 2012 a ban on lightweight plastic bags has been in place since 2011.

5. ADDITIONAL POLICY CONSIDERATIONS

As highlighted above, there has been a burst of policy activity in Australia in recent years, as policymakers respond to the community's expectations, as well as challenges brought about by China's National Sword policy.

While there is no shortage of goodwill and principled intent, there is no sliver bullet when it comes to finding all-encompassing solutions.

Evidence from studies on the recycling performance of leading global jurisdictions suggests a number of overarching lessons.^{xiv} This includes the importance of long-term (ten year plus) commitments to improve recycling, as well as the adoption of a range of policy initiatives that evolve over time.

Other lessons include recognising the need for coordination and collaboration across different levels of government, as well as the necessity for governments to impose some mandatory measures to drive improved performance. The need for complementary interventions across the value chain is similarly important.

5.1 Lack of end markets for recyclable materials

Amongst the current challenges, a lack of end markets for recyclable materials and products stands out. For recycling efforts to be sustainable, markets for recyclables in Australia need to be capable of absorbing the quantity of materials being collected.

Cost considerations play a significant role affecting local demand for recyclables. This includes the impact of commodity prices for imported materials (both virgin and recovered) relative to the prices for recovered local material, on the domestic market for recycled product.

By way of example, the Recycling Market Situation Report suggested that recycled plastics have to be 10 to 20 per cent cheaper than virgin resin to justify the additional purchasing, handing, processing and quality assurance cost imposts associated with introducing a significant proportion of high-quality recycled content into the incoming material mix.^{xv}

As noted in Section 4.1 above, governments have proposed a number of policy actions aimed at building demand and markets for recycled materials and products. This should be a top priority.

It is also important to recognise that policies to incentivise the uptake of recovered materials need to be supported by a framework that can identify - in a credible and verifiable manner - the amount of recovered material used as an input into other final products.

It is difficult to do this through an assessment of the end-product. Instead, use of recovered materials needs to be ascertained early in the supply chain when the use of such material can be known with a high degree of certainty.

This suggests that some type of 'chain of custody' arrangement is essential so that the recovered material can be traced through the production process. Failure to implement robust verification arrangements will leave any policy initiative vulnerable to misuse and potentially fraud.

The Australian Council of Recycling is currently developing a Voluntary Recyclers' Accreditation program that is intended to ensure high standards of operational performance and accountability in Australian recycling activity.

As well as promoting greater consumer and user confidence and reducing reputational risk for the industry overall, the program will be complementary to programs that currently exist for industry standards (such as for tyre recycling, e-waste and external general standards including ISO 14001 and ISO 9001).

5.2 Differential tax treatment

As noted above in the discussion of market failures, in an ideal world prices for waste disposal, virgin material and manufactured goods should reflect the full costs involved, with price differentials existing such that recyclables have a reduced price compared with primary materials.

The OECD has noted that the most straightforward way of using environmental product taxes to discourage consumption of environmentally damaging products is simply to levy a tax on those products.^{xvi}

In recent times, for example, there have been calls for the introduction of a tax or set of taxes on the use of plastic.^{xvii} The primary purpose of such a tax would be to change behaviour to both reduce the overall level of plastic use in the economy and to incentivise widespread use and recycling of the plastic that is used.

It should be noted however that reducing overall demand for plastic is a different proposition to encouraging more recycling of plastics.

Consideration of a plastics tax is by no means straightforward. Not only are there issues around where in the plastics production chain the tax should be levied, but also associated issues to do with demand elasticities, substitutability and incidence (i.e., where the final economic cost is borne).

The tax could be levied upstream on the production of the initial monomers or the processing of these monomers into plastic resins. Alternatively, it could be levied on the process of converting the resins through industrial processes into finished plastic or during the production of goods made entirely from plastic. The tax could also be levied on the purchase and consumption of these goods or on their disposal.

Taxes levied upstream raise costs of a principal input, but run the risk of simply being absorbed by profits along the supply chain, potentially raising revenue but not changing behaviour.

Taxing plastic manufacturers on the sale of non-recycled resins, or converters on the purchase of non-recycled resins, could incentivise plastic production from recycled resins – though neither would necessarily reduce overall demand for plastic in the economy.

As noted by the New Economics Foundation^{xviii} there may also be related limitations to a plastics tax that arise from factors such as elasticity (how resilient demand for a good is in the face of a price rise); substitutability (whether there are alternative inputs or production possibilities throughout the supply chain); and incidence (the difference between where the tax is statutorily levied and where the final economic cost of the tax is borne).

This highlights that there are both advantages and disadvantages to different approaches to taxation, with such taxes not always the most efficient or politically feasible solution.

In contrast to the imposition of direct environmental taxes, the OECD also notes the possibility of using more complex policy mix that would provide stronger incentives for changes in production and consumption to support environmental objectives.

Such a policy approach would entail environmentally motivated tax differentiation. This approach is to simultaneously increase the tax on virgin materials that contribute to negative externalities while at the same time reducing tax rates on the more environmentally friendly alternative.

Various studies have suggested that differentiated consumption tax (VAT) rates can be used to give advantage to recycled materials relative to primary materials. ^{xix} This can be done either by reducing the rate of VAT applicable to recovered materials, or alternatively disallowing the input credits against the output VAT liability.

Evidence for the OECD on consumption tax trends shows that just under a third of member nations impose reduced rates of VAT on waste related activities.^{xx} Examples of countries with such reduced rates are outlined in Table 4.

China has also implemented tax incentives intended to promote the circular economy by easing the burden on businesses that recycle resources during production. In 2009 the Chinese government introduced various forms of VAT incentives to encourage the circular use of materials such as agricultural, industrial and domestic waste.

In 2015 it updated this policy with a list of commodities and products that support reuse and recycling practices.^{xxi} VAT refunds of 50 to 100 per cent were available for specialised products such as recycled tyres, sand produced from construction waste, cement with recycled content, cardboard and fibreboard and power generation using biowaste. Supporting this aim, in 2018 China banned imports of most waste types to further incentivise its domestic recycling sector.

COUNTRY	VAT Rate		Type of supply		
	Standard	Reduced			
	%	%			
Austria	20	10	Collection of domestic waste		
Belgium	21	0	Certain recovered materials and by products		
Cyprus	19	5	Domestic waste collection and treatment		
Czech Republic	21	15	Collection and treatment of waste		
France	20	10	Treatment of waste		
India	18	5	Goods made from recycled products		
Ireland	23	13.5	Waste disposal		
Italy	20	10	Urban waste		
Luxembourg	17	3	Collection and treatment of waste		
Poland	23	8	Collection and treatment of waste		
Portugal	23	6	Collection, transport, evaluation $\boldsymbol{\delta}$ disposal of waste		
Slovenia	22	9.5	Collection and treatment of waste		
Spain	21	10	Waste treatment		

TABLE 4: REDUCED RATE VAT - FOR WASTE AND RECYCLING SERVICES

Source: OECD Consumption Tax Trends 2018

The research is mixed, in fact, as to the effectiveness of reducing VAT rates. The OECD has noted that while VAT taxes cover the widest range of commodities and transactions, it is the least flexible of the existing product tax systems in terms of its ability to accommodate the requirements of additional environmentally related product taxes.

Specifically it notes 'VAT is really only effective at introducing incentives for changes in consumer behaviour and cannot discourage the use of environmentally damaging products in the course of production. The reason is that VAT is essentially designed to tax sales to final consumers only. It does this implicitly, by giving credit (i.e., a refund) for taxes paid on a firm's purchases of taxed goods and services. The effect of this is to leave businesses indifferent to the rate of VAT They pay on purchased inputs, since they effectively reclaim that tax when they are taxed on their sales.'^{xxii}

From a consumer perspective, differentiated VAT rates on more environmentally friendly products could change incentives, although most likely at the margin and at the risk of adding significant additional complexity to the tax system.

For example, in the case of an otherwise identical child's plastic toy, a product made from recycled materials and sold VAT free may have a slight price advantage over a product made from virgin materials and taxed at the full rate. Whether the price differential alone would be sufficient to induce significantly changed consumer buying behaviour and whether it would dominate other factors influencing the purchase (especially in instance where the two products had other differences) is unclear.

In the case of differentiated VAT rates for composite products, the issue is more complicated. Taking the example of packaged soft drink – sold either in recycled plastic bottles or bottles made from virgin material – it is the VAT treatment of the overall product that matters. Policy makers would be loath to make the soft drink sold in a recycled bottle VAT-free (particularly as the bottle itself would only be a small proportion of the overall value of the product sold). Other policy mechanisms such as a container refund scheme would be more appropriate.

An alternative rationale for having a reduced VAT rate is to provide a signalling device to encourage the greater use of recovered materials. To the extent that this can increase demand, subsequent flow-on effects, such as greater economies of scale, may improve the cost competitiveness of the recovered material sector, ultimately resulting in lower costs of end products for consumers.

5.3 Differential GST treatment of recovered materials and secondhand goods

In Australia, avenues exist to effect changes in the rate and base of the GST with relevant processes set out in the Intergovernmental Agreement on Federal Financial Arrangements. Under this agreement, any changes require (i) the unanimous support of the states and territories, (ii) endorsement of the Commonwealth Government of the day and (iii) passage of relevant legislation by both Houses of the Commonwealth Parliament.

The agreement also stipulates that future changes to the GST base also need to be consistent with the maintenance of the integrity of the tax base; simplicity of administration; and minimising compliance costs for taxpayers.

Satisfying these requirements would present some difficulty if changes were sought to alter the GST treatment in order to incentivise the greater use of recovered materials in the production process.

As outlined in the previous section, to the extent that recovered materials are intermediate inputs - as opposed to final consumer products - changing the GST rate would likely have minimal impacts in an Australian context.

This is because the GST tax liability – consistent with the design features of most value added taxes – is intended to fall on final consumers. The availability of input tax credits for GST paid on inputs to the production process means that lowering the tax rate on a business input will be unlikely to manifest much of a behavioural response within the supply chain.

In the context of recycled products as a form of second-hand good, there has been some interest in whether such second-hand goods should be given a GST exemption.

When the GST was introduced in 2000, the policy was clear in setting out the treatment and rationale for taxing second-hand goods. In line with the treatment of new goods, sales of used goods are subject to GST (i.e., taxable) if sold by a business, but not if sold by a private individual.

Where used goods are sold by registered businesses the GST only applies to their value add (i.e., their margin) as they are able to claim input tax credits for GST paid on purchases of any business inputs.

This approach has been established practice for twenty years and its is unlikely there would be appetite from governments to revisit this accepted design feature of the GST.

A further complication is the budgetary pressures all governments are facing and the fact that the consumption base on which the GST is levied is being eroded as the goods and services which are exempt from the GST (such as healthcare services) are growing as a share of spending.

As a consequence, the momentum is swinging in the direction of raising the GST or widening the base, as opposed to a narrowing, which would be required should GST exemptions for recovered materials or recycled products be sought.

5.4 A 'Plastics Reduction Offset Scheme'

There are of course alternatives to a raw materials tax which include options such as 'chargerefund schemes' and 'materials-based fee rebate schemes' (including deposit refund schemes).

The intent behind these schemes is, in essence, to tax all use of materials at a level appropriate to virgin materials (or impose an upfront fee) and then provide a refund or partial refund of the tax or fee in proportion to the amount of recovered material used.

A further variant to this approach would be to set materials-based targets for the use of recycled content, which is supplemented by the use of a flexible implementation mechanism in the form of a tradable offsets scheme (with certificates or credits issued for use of recovered materials).

The setting of such targets would be expected to boost demand for recycled material as it is incorporated into the production process. Variants of this approach have been considered in a UK and French context.

Under this arrangement, once an overall target is established for the recycled content of production, individual manufacturers who were using a higher level of recycled content than was specified by the standard would generate offsets which could be sold to others. The purchaser of the offsets would be entitled to use these credits as evidence of contributions towards meeting their targets.

Few restrictions would be placed on who could generate the offsets or to whom they could be sold, and manufacturers would be able to trade offsets with each other. The offsets would be expected to achieve a value in the market that was linked to the marginal additional cost of integrating recycled content into production (i.e., the cost differential between virgin material and recyclate).

A similar support mechanism was considered for France through the Orplast scheme to address the cost gap between virgin and secondary plastic raw material^{xxiii}. The proposed approach was for a pan-European mechanism utilising 'recycling certificates' issued by European recyclers to their customers which are then redeemable by the purchasing companies (i.e., the plastics converters).

A critical feature of the approach is the establishment of a 'regulatory centre' which would have the key functions of monitoring the sales of recovered product by recyclers; monitoring payments to recyclers; monitoring the uses of recovered product (including quantities and materials); and monitoring of the relevant certificates issued, transmitted and reconciled.

In the stylised example set out below, a mandated level for recycled content of 40 per cent would be set.

The example assumes that 100 units of input are required with the price of virgin input \$100 per unit and the price of recyclate \$120 per unit. In this example, the value of the certificates or offset would be \$20 per unit (reflecting the price differential between virgin and recovered inputs).

Manufacturers meeting the 40 per cent target for recycled input would be issued with offset certificates worth \$800. Upon completion of the manufacturing process, the certificates would be transmitted to relevant regulatory agencies for validation with a tax offset or subsidy payment subsequently received.

Manufacturers short of the target would be required to acquire certificates while those exceeding the target could sell their excess credits.

FIGURE 6: STYLISED EXAMPLE OF PLASTICS REDUCTION OFFSET SCHEME





In this example no materials tax is applied to virgin inputs. Rather a tax offset or subsidy arrangement would be in place – funded by government – as a means of increasing the use of recovered materials.

Over time, the increased demand would be expected to make the recovered material more cost competitive and the value of the certificates (and therefore cost to government) would decline.

While this approach could have general application, there would be merit in trialling a pilot scheme specific to the plastics industry, recognising the substantial and urgent challenges Australia facing with regards to plastics recycling.

5.5 Further reform of landfill levies

As noted above, landfill levies are one of the more effective instruments for diverting waste away from landfills and into resource recovery activities. Not only are such levies a key mechanism for internalising externalities, but when set at the right level can make recycling and material recovery more cost effective than the landfill alternative.

Work previously undertaken for the Australian Council of Recycling highlighted principles for efficient pricing of landfill levies, including that an optimal gate price should reflect the full private and direct external costs of landfill as well as reflecting society's desire to reduce waste and promote recycling.^{xxiv}

There is also a need to balance the trade-off between targeting different landfill operating practices and waste streams, and the levy being simple and cheap to administer.

Landfill levy rates have traditionally varied across the states and territories with variations in the application of key mechanisms and definitions of leviable waste. This has led to market distortions such as the unnecessary transport of waste between jurisdictions, high administration costs and uncertainties in the regulatory environment that undermine confidence to undertake new investments.

As outlined in Section 3.3, landfill levies raise significant amounts of revenue for the states that can be reinvested into activities related to waste and recycling. However, there are significant concerns that an insufficient amount of hypothecation is occurring.

Residual Waste from recycling operations

Resource recovery facilities cannot always recycle the full amount of waste throughput at their sites. There is always a residual component of waste that cannot be recycled and therefore needs to be sent to landfill.

Evidence presented to the Senate Committee inquiry on the waste and recycling industry suggested that the amount of residual waste recycling facilities had to dispose of was around 10 to 15 per cent for municipal waste (and sometimes up to 40 per cent, representing a significant cost to them.^{xxv}

The disposal of recycling residual is a particular issue for metal recyclers because there are few established alternatives for the by-product of metal recycling – shredder floc, which comprises the non-metal residual from recycling vehicles and white goods. Large amounts of shredder floc are sent to landfill and increasing levy rates serve to increase the operating costs of metal recyclers.

Although there is overall industry support for land fill levies, the impact on recycling companies can be such that it is a disincentive towards being involved in the recycling industry.

Table 5 below sets out estimates of the amount of residual waste from recycling operations that is sent to landfill, broken down by state.

Of the 21.7 million tonnes of waste sent to landfill an estimated 1.3 million tonnes comprises residual waste from recycling operations. The estimate has been calculated using an assumption

that 10 per cent of municipal solid waste recycling is residual waste while 3 per cent of other recycling activities becomes residual waste that goes to landfill.

Using weighted average levy rates, this suggests that around \$120 million per year in landfill levy revenue is generated from fees imposed on residual waste from recycling operations.

A sensitivity analysis has been undertaken using different assumptions.

- In a higher case scenario, it has been assumed that 15 per cent of MSW recycling constitutes residual waste and 5 per cent of other recycling becomes residual waste. In this case, the total amount of recycling residual going to landfill is estimated to be around 2 million tonnes, generating an estimated \$190 million in landfill levy revenue.
- In a low case scenario, it has been assumed that 5 per cent of MSW recycling constitutes residual waste and 1.5 per cent of other recycling becomes residual waste. In this case, the total amount of recycling residual going to landfill is estimated to be around 780 kilotonnes, generating an estimated \$80 million in landfill levy revenue.

	Landfill*	Recycling residual to landfill		Sensitivity**	
	kt	kt	Levy proceeds \$ million	High Case \$ million	Low Case \$ million
Now South Wales	7 101	490	70	110	45
New South Wales	7,101	480	70	no	45
Victoria	4,245	410	30	45	20
Queensland***	6,125	220	8	15	5
South Australia	666	40	6	10	3
Western Australia	2,360	100	7	13	4
Total	21,730	1,250	120	190	80

TABLE 5: ESTIMATED WASTE LEVIES ON RESIDUAL FROM RECYCLING OPERATIONS

* 2016-17

Source: NWRIC, ACOR and author's calculations.

** High case assumes 15% of MSW recycling and 5% of other recycling is residual waste; Low case: 5% for MSW and 1.5% for other recycling. *** Qld has a 50 per cent discount on levy fees for recycling residual.

These figures demonstrate that the imposition of levies on residual waste from legitimate recycling operations inflicts serious cost imposts on recyclers.

Companies that are being proactive and investing considerable capital into recycling facilities believe they should not be penalised with landfill levies to dispose of residual materials – including for example waste material that goes to their facilities through contamination and incorrect disposal in kerbside collections.

When recycling companies are considering investments in new decontamination equipment, typically at a cost of \$50 to \$60 million, it can be difficult to meet the business case when millions of dollars in landfill levy fees must be paid on residual waste from recycling operations.

There is a good appreciation of many of the issues surrounding waste levies including those outlined above. The National Waste and Recycling Industry Council's *White Paper on Waste Levies* recommended a national levy pricing strategy be developed through COAG to prevent levy avoidance and ensure local and international competitiveness of the resource recovery sector.

It also proposed the development of national waste levy protocols as well as greater transparency and accountability by jurisdictions on how much levies are raised, how they are spent and annual reporting.

While there has been recent progress through COAG on harmonisation, there is a way to go in relation to the need for greater hypothecation as well as the landfill treatment of residual waste from recycling.

Landfill Reform Options

As part of the process of harmonising arrangements for land fill levies, all states should follow Queensland's example and provide a 50 per cent levy discount for waste residuals created by the legitimate resource recovery activities of recycling companies.

On the basis of the estimates in Table 4 above, this would come at an estimated cost of around \$50 million to \$80 million per annum in foregone levy proceeds to the states.

It is recognised that given current budgetary outlooks, states may be reluctant to agree to this. However, recognising the national interest considerations in supporting the recycling industry, the Commonwealth, as part of a 'grand bargain' could contribute to replacing this lost revenue with direct payments to the states.

In doing so, the Commonwealth would attach conditions on these payments that would address the other major problem - being insufficient hypothecation of landfill levy proceeds toward other measures that help meet waste management goals.

In essence, Commonwealth payments to the states to compensate for the loss of revenue from lower levies for residual waste from legitimate recycling activities, would be conditional on them meeting overall targets on the hypothecation of landfill levies more generally. A hypothecation target of at least 80 per cent could be set.

6. Conclusion and Summary of Policy Options

The overview of the waste and recycling sector provided in this paper highlights an abundance of policy activity and goodwill to effect change in the way Australia manages its waste and boosts recycling. But results matter more than good intentions, and the reality is that Australia is a long way off achieving the ambitious targets it has set itself in this space.

To hit agreed waste management and recycling targets, bold new thinking is needed that extends beyond the current suite of policies envisaged. Additional policy options are needed that can shape incentives and address market failure.

Options examined in this paper are summarised in Table 6 below.

POLICY OPTION	POLICY RATIONALE	EASE OF IMPLEMENTATION	POLITICAL CONSIDERATIONS			
 Improved reporting and monitoring of 'chain of custody' 	Strong	Straightforward	Straightforward			
2. Reduced rate GST on recyclates	Uncertain	Difficult	Problematic			
3. GST exemption for recyclates	Uncertain	Difficult	Problematic			
4. GST exemption for second hand goods	Weak	Difficult	Problematic			
5. Plastics Reduction Offset Program	Strong	Moderate	Moderate			
6. Landfill levy discount for residual waste from legitimate recycling operations	Strong	Straightforward	Moderate			
7. Commonwealth subsidy to states in return for improved hypothecation of levies	Strong	Moderate	Moderate			

TABLE 6: SUMMARY ASSESSMENT OF ADDITIONAL POLICY OPTIONS

Policies to establish formal mechanisms to improve data and measurement of recycling outcomes and new 'chain of custody' arrangements have a strong policy rationale and should be relatively straightforward to implement, both at a practical and political level.

Reflecting the discussion in sections 5.2 and 5.3, policy options around differential tax treatment recovered materials have a less certain policy rationale and are likely to suffer from implementation challenges and difficult political considerations.

The establishment of a Plastics Reduction Offset Scheme has a strong policy rationale and has the potential to make a material difference in incentivising the greater usage of recovered materials. While there are likely to be some challenges with the implementation of such as a scheme they should not be insurmountable, especially if done in the first instance through pilot scheme.

Further reforms to waste levy arrangements to address market inefficiencies associated with the disposal of residual waste from legitimate recycling operations, likewise, have a strong policy rationale and should be straightforward to implement. There may be some challenges from a political perspective.

ENDNOTES

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" OECD 'Business Models for the Circular Economy: Opportunities and Challenges for Policy' 2019

^{III} APCO, Australian Packaging Consumption & Resource Recovery Data, December 2019

^{iv} National Waste & Recycling Industry Council, White Paper: Review of Waste Levies in Australia, October 2019

^v Australian Council of Recycling, *Recycling Grants Analysis*, February 2020.

^{vi} Victorian Auditor-General's Office, *Managing the Municipal and Industrial Landfill Levy*, Independent Assurance Report to Parliament, July 2018

vii 2018 National Waste Report, Figure 4

viii National Waste Report 2018, CIE Headline economic value for waste and materials efficiency in Australia

ix ABS Cat No: 8155.0, Australian Industry 2018-19

^x Data on exports of Australia's wastes 2018-19, blue environment, November 2019

xi Recovered Resources Market Bulletin, January 2020, Victorian Market Intelligence Pilot Project

xii National Waste Policy Action Plan 2019, page 18

xiii Queensland Waste Reduction and Recycling (Waste Levy) Amendment Regulation 2019: Division 4 – Discounting Waste Levy for residual waste

^{xiv} See for example '*Recycling and resource recovery infrastructure in Victoria: International and Australian comparisons*', UTS & alphabeta, Sept 2019

^{xv} Dept of Environment and Energy, *Recycling Situation Summary Report*, September 2019

^{xv} OECD Product Taxes and Environmental Tax Differentiation Design and Implementation (Ch 3 Creating Incentives for Greener Products), 2014.

^{xvi} ibid

^{xvii} See for example, Credit Suisse, '*The Age of Plastic: At a tipping point*', November 2018; and New Economics Foundation '*The Price is Right ... or is it*? *The case for taxing plastic*', Report for the Plastic Solution Fund, Sept 2018

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^{xix} OECD: Business Models for the Circular Economy, April 2019; and OECD: 'Product Taxes and Environmental Tax Differentiation Design and Implementation' (Ch 3 Creating Incentives for Greener Products) 2014; and eunomia: Demand Recycled: Policy Options for Post-Consumer Recycled materials, October 2018.

xx OECD Consumption Tax Trends 2018

^{xxi} Chinese Ministry of Finance, State Administration of Tax, *'Special Directory of Value Added Tax on Integrated Use of Resources and Services'* No. 78 June 2015 ^{xxii} OECD : 'Product Taxes and Environmental Tax Differentiation Design and Implementation' (Ch 3 Creating Incentives for Greener Products) 2014

^{xxiii} 'France – Developing a Financial Support Mechanism for increasing use of post-consumer recyclate for the plastics industry' in eunomia, *Demand Recycled: Options for Increasing Demand for Post-Consumer Recycled Materials*, October 2018

^{xxiv} Economic Effects of the South Australian solid waste levy – Report to the Australian Council of Recycling, Deloitte Access Economics, July 2015

^{xxv} Senate Environment and Communications References Committee, *'Never waste a crisis: the waste and recycling industry in Australia'* June 2018.

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