MAKING WASTE LEVIES WORK - THE HYPOTHECATION OF FUNDS

EXECUTIVE SUMMARY

Australian State Governments have established waste minimisation and diversion of waste from landfill as key sustainability policies.

Most have introduced resource recovery and diversion of waste from landfill targets as statements of public policy and to engender reform in resource recovery.

This paper contends that most state targets are currently unachievable with the current economic signals and policies and that further strengthening of the economic and regulatory framework, in which recycling and waste disposal take place, is required.

Governments have introduced waste levies because they support the drive for sustainable resource recovery, redirect waste from landfill if levies are set high enough to reflect current externalised costs making landfill more competitive than alternative resource recovery operations and generate funds which can be invested into supporting sustainable resource recovery.

Benefits of the waste levy include increased gate fees for resource recovery activities, continued pressure to avoid waste generation, compatible implementation with MBIs and EPR, funds to invest in resource recovery activities and potential for immediate implementation.

The single most common criticism of waste levies is the issue of hypothecation (or “ring fencing”) of some proportion of the funds raised for the purpose of delivering the State waste strategies against use of the funds for other public purposes such as roads and hospitals.

This paper puts forward for discussion a series of actions that could enhance the effectiveness of increased waste levies and addresses various stakeholder concerns. In particular it argues that governments should hypothecate a considerably higher percentage of waste levy funds into resource recovery and improvements to existing waste management practices.

The paper proposes that hypothecated funds be used for projects including:

- local government competitive grants
- private resource recovery infrastructure fund
- C&I competitive grants

- EPR and MBI development
- residuals from resource recovery rebate scheme

The paper suggests that waste levies are an important tax on the disposal of materials to landfill, however these taxes would be more acceptable if all state governments utilise a greater proportion of the taxes on waste and related reforms.

1 BACKGROUND

In spite of increased resource recovery, millions of tonnes of materials continue to be wasted in Australia. Australians generate some 32 million tonnes of waste each year, of which approximately half ends up in landfill, some 900 kilograms per person/year.[1]

To reverse this trend most State Governments have introduced resource recovery and "diversion of waste from landfill" targets as statements of public policy and to invigorate the reform program.

Gains have been made in capturing the 'low hanging fruit', including at-home 'dry recyclables' from the Municipal Solid Waste (MSW) stream in addition to concrete, bricks, metals and some wood and garden organics from Construction and Demolition (C&D) materials.

However, large parts of the overall waste stream including Commercial and Industrial (C&I) by-products of manufacture, away-from-home packaging and municipal organics (including food) continue to be landfilled. Additionally, total amounts of waste generated are increasing annually, demonstrating the difficulty of decoupling waste generation and economic growth.

It is argued by many that there is an absence of effective pricing or regulatory mechanisms to drive resource recovery activities, investment in recovery infrastructure and changes in the production value chain so that end-of-life considerations are factored into the design stage. Some of the continuing distortions in the marketplace include:

- absence of a price signal that incorporates the externalised costs of increased pollution (eg greenhouse gases, depletion of natural resources and disruption of ecosystem services
- costs for end-of-life management of materials not factored into product and packaging prices, but are borne by the general community
- inefficient allocation of resources as materials wasted to landfill have a higher net resource value
- absence of competition for wasted resources because of the continued non-monetised impacts of landfill including pollution of air (e.g. climate change), water (leachate) and land (limited post-closure use).

Most State Governments have determined the need for greater levels of resource recovery and diversion of waste from landfill. The following table summarises the targets for the MSW and C+I streams.

State Government landfill diversion targets

State	Year	Current	Target
NSW	**2014**	**26%**	**66% diversion MSW**
	2014	**35%**	**63% C+I**
VIC	**2013**		**65% MSW**
	2013		**80% C+I**
WA	**2020**		**100% diversion**
ACT	**2010**		**100%**
SA	**2010**		**75% MSW**
	2010		**30% C+I**
NT			**no target**
QLD			**no target**
TAS			**in development**

THE TARGETS ARE LARGELY UNACHIEVABLE

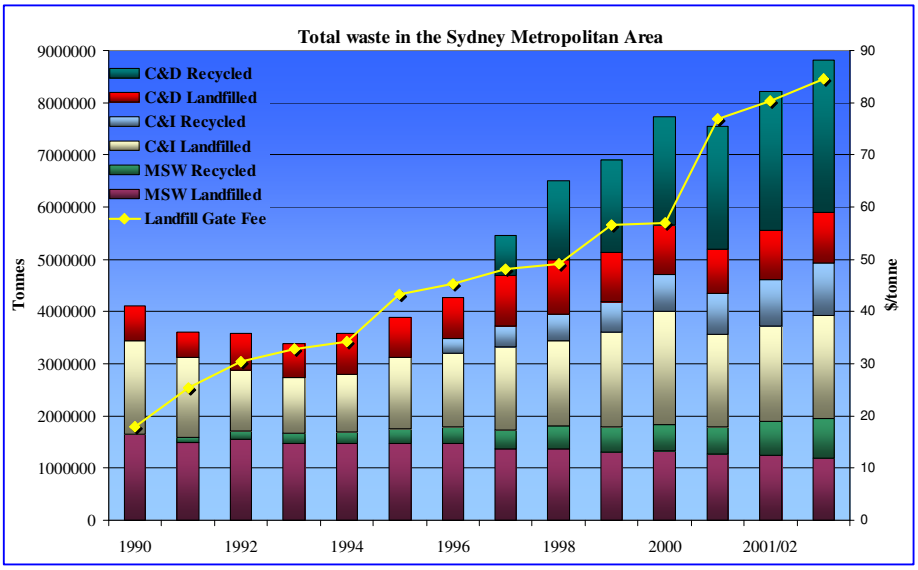
While governments have outlined their intention to drive waste from landfills and into resource recovery facilities and systems, the economic and policy signals are generally failing to achieve the desired outcomes.

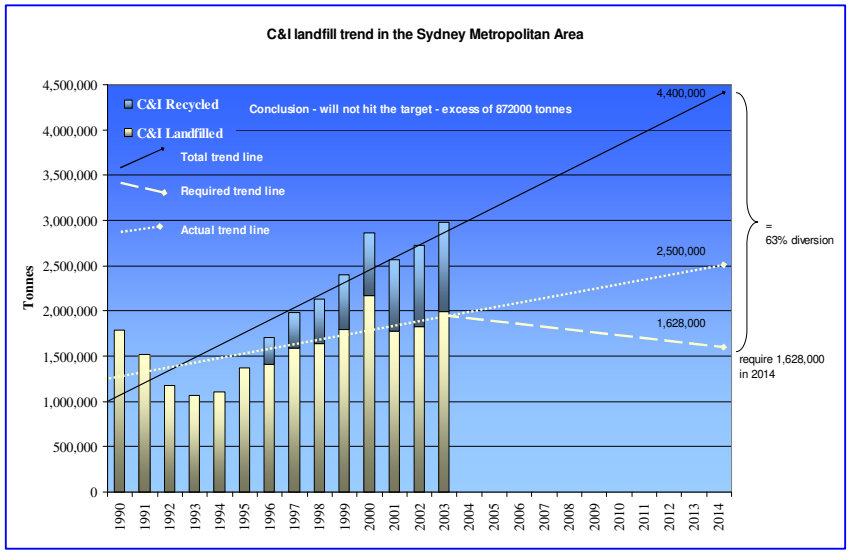
As a consequence, most States are likely to fail to achieve their stated waste diversion targets.

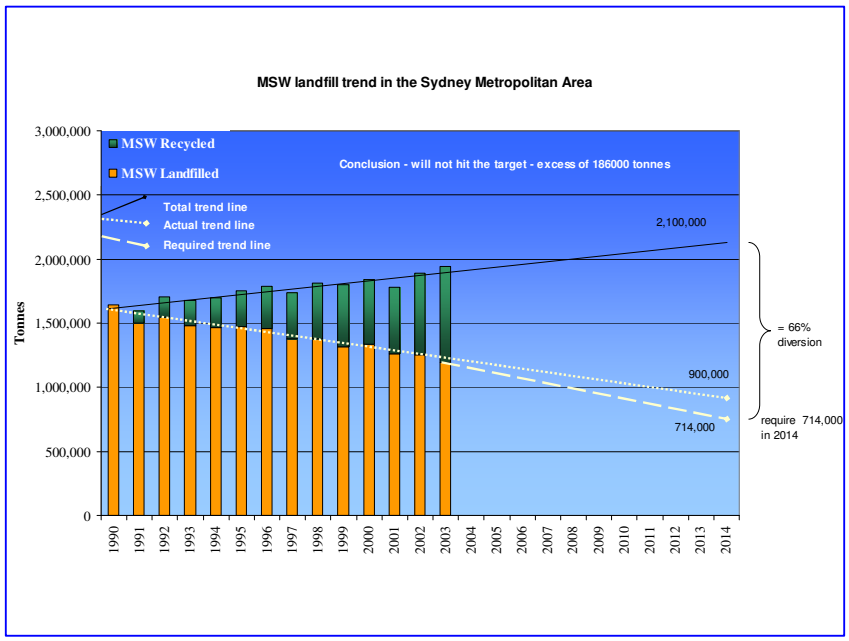
The following section outlines the historical trends in waste generation in each state and the projections for the future based upon population growth rates, per capita consumption growth and the stated targets as enunciated in each state strategy. This work was undertaken by Hyder Consulting for SITA Environmental Solutions and the Waste Management Association in 2006.

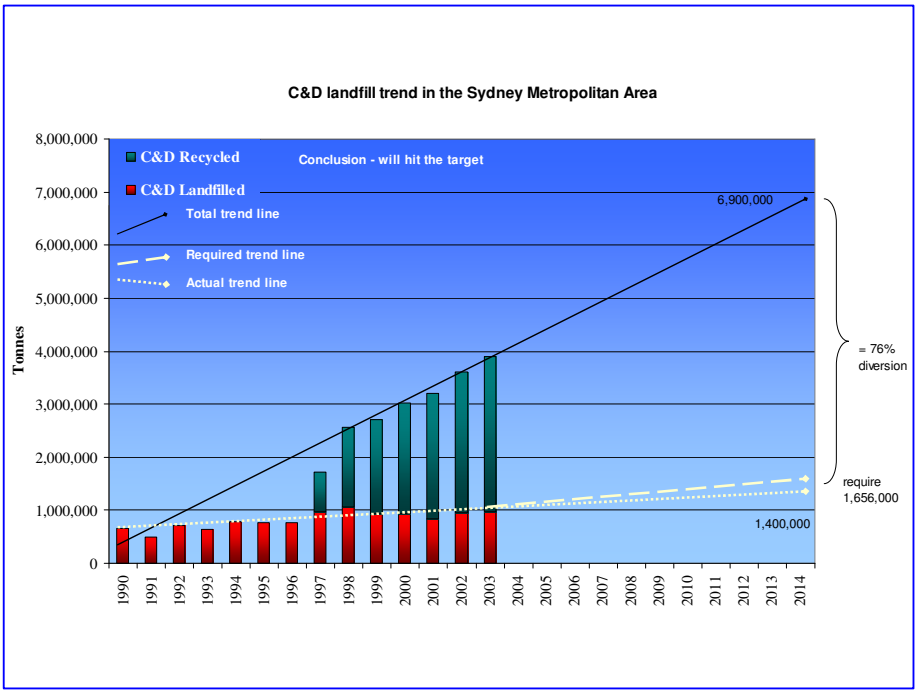
NSW

- Waste generation rates are growing exponentially with population and economic growth
- In NSW alone the Government would need to spend $134 million per year in order to achieve its Commercial and Industrial recycling targets
- NSW C+I waste will overrun its target by 2 million tonnes
- Recycling infrastructure to process 1.2 million tonnes will need to be built in Sydney in the next 4 years
- 0.84 million tonnes of C+I waste will need to be source separated at waste generators
- None of this will happen unless the market incentives for recycling are greatly improved
- The recent changes to the waste levy will go some way to driving improvements in recycling but probably not far enough
- Between 8 and 12 new C+I Dirty MRFs will be required in Sydney alone
- Municipal Solid Waste (MSW) will also not achieve its targets



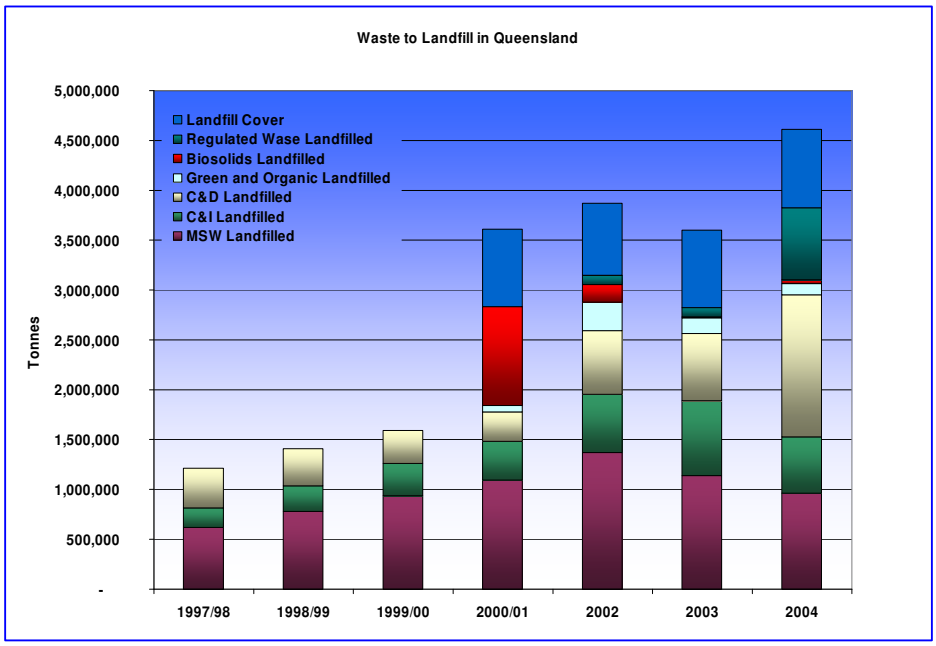

C&I landfill trend in the Sydney Metropolitan Area
C&I Recycled
C&I Landfilled
Conclusion - will not hit the target - excess of 872000 tonnes
Total trend line
Required trend line
Actual trend line
4,400,000
2,500,000
1,628,000
= 63% diversion
require 1,628,000 in 2014
Tonnes
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

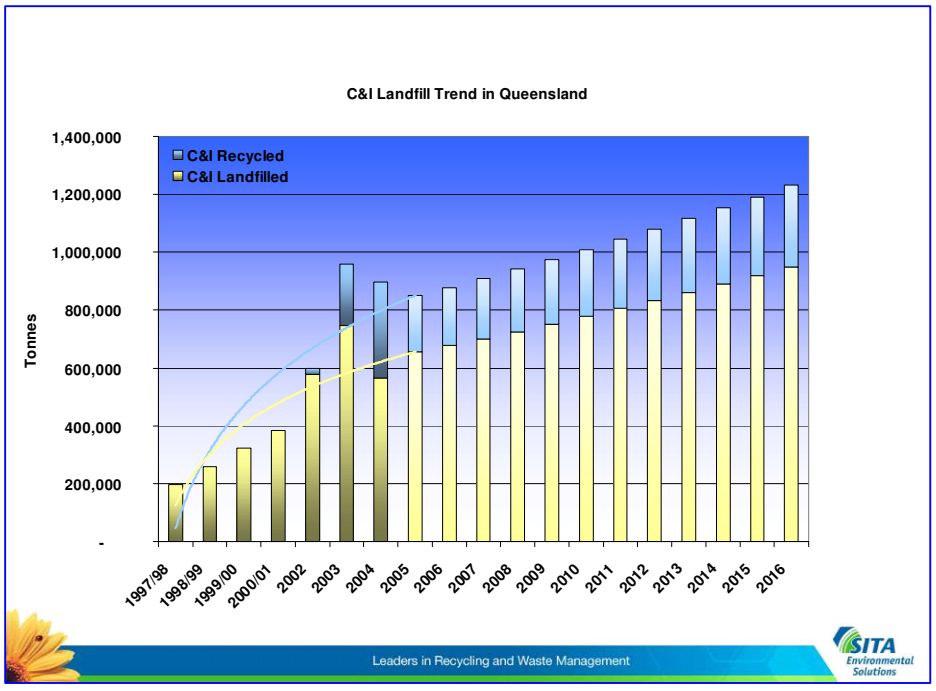

MSW landfill trend in the Sydney Metropolitan Area
MSW Recycled
MSW Landfilled
Conclusion - will not hit the target - excess of 186000 tonnes
Total trend line
Actual trend line
Required trend line
2,100,000
900,000
714,000
= 66% diversion
require 714,000 in 2014
Tonnes
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014


C&D landfill trend in the Sydney Metropolitan Area
C&D Recycled
C&D Landfilled
Conclusion - will hit the target
Total trend line
Required trend line
Actual trend line
Tonnes
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
6,900,000
1,400,000
= 76% diversion
require 1,656,000
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

QUEENSLAND

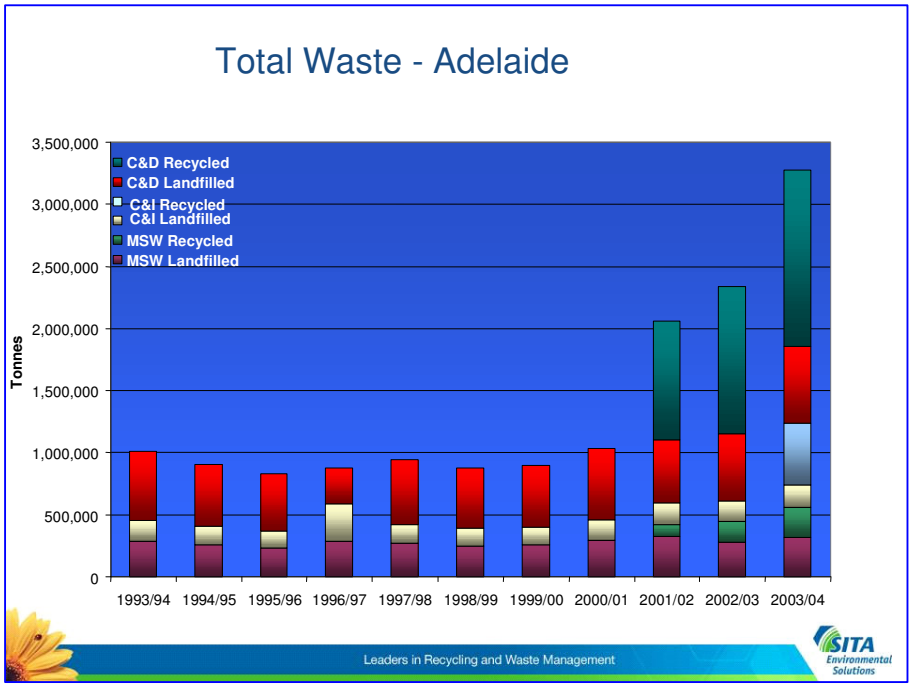
- Waste generation rates are growing exponentially with population and economic growth
- C+I waste to landfill is predicted to grow by 200,000 tonnes to 2010
- The rate of recycling (through MRF infrastructure and source separation) is too slow to prevent waste to landfill growing considerably.

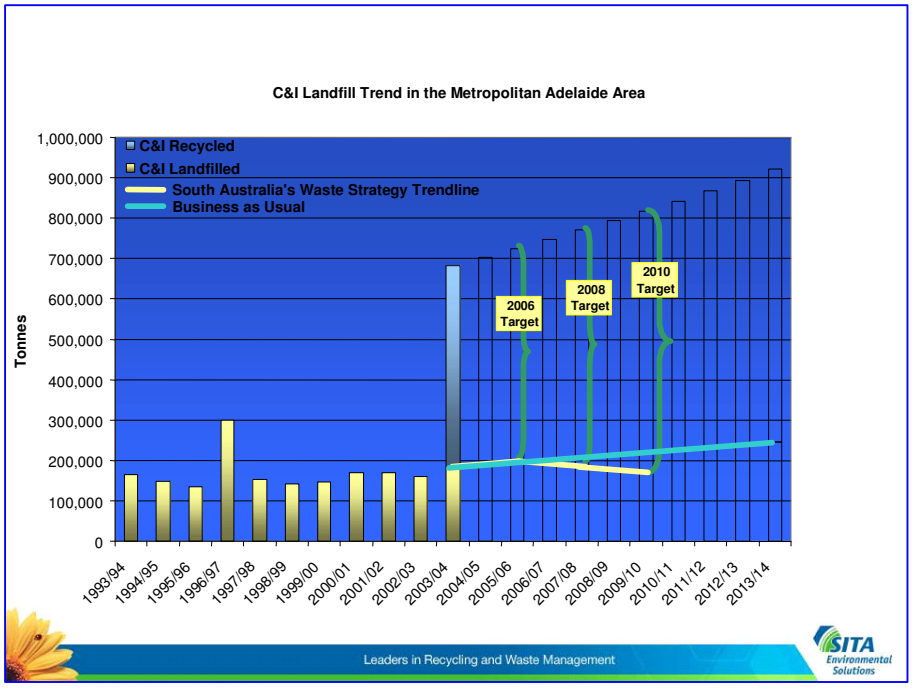




SOUTH AUSTRALIA

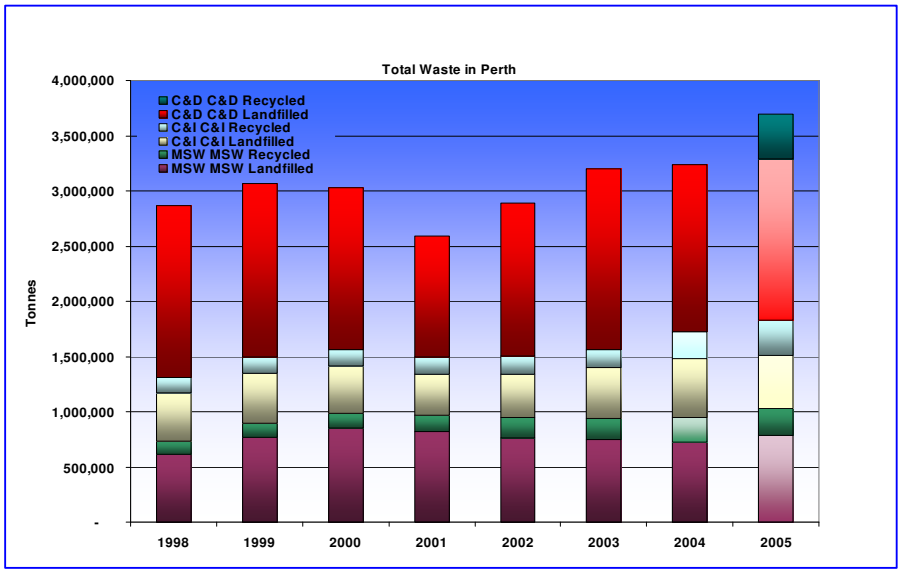
- Waste to landfill is growing but not at the rate of other states
- Landfill targets are more achievable for C+I waste
- Recycling infrastructure (C+I MRF's) will need to be installed to achieve the targets

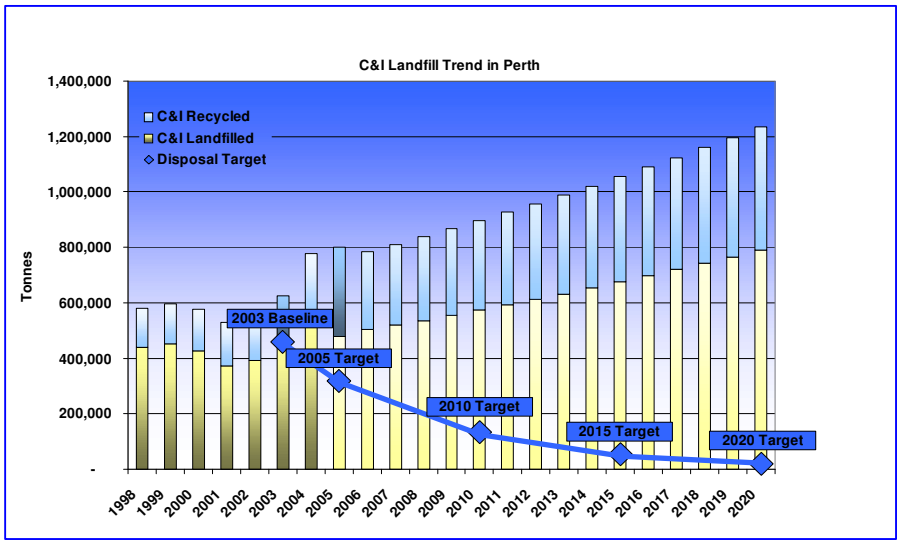




WESTERN AUSTRALIA

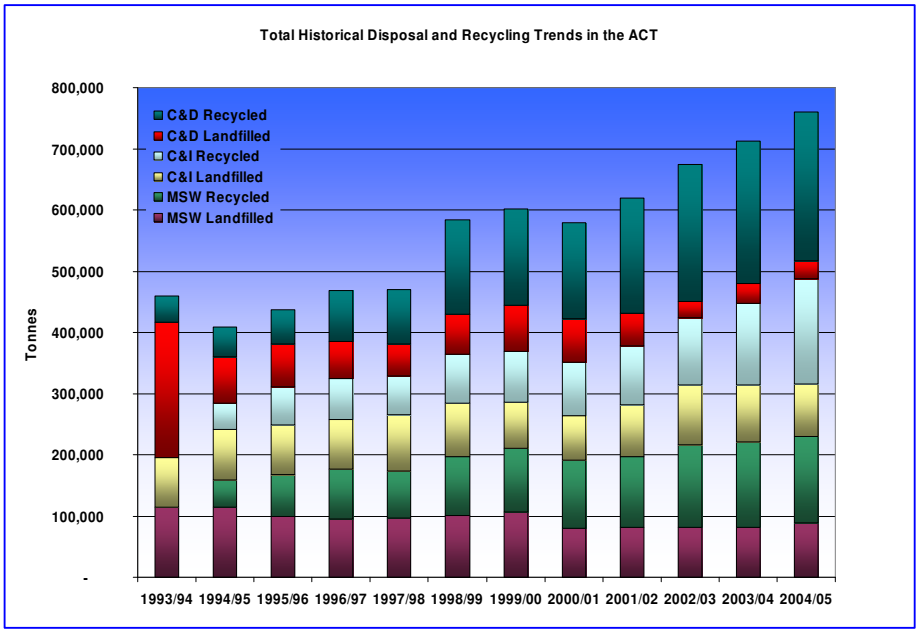
- Waste generation is growing at a more moderate pace
- C+I diversion from landfill targets are more aggressive and will not be achieved without significant government intervention
- The rate of increase in C+I MRF technology is too slow
- An additional 100,000 t/yr of C+I waste is predicted to be landfilled by 2010
- An increase in C+I recycling of 400,000 t/yr is required to hit the targets
- More than 5 new C+I MRFs will be required in that time

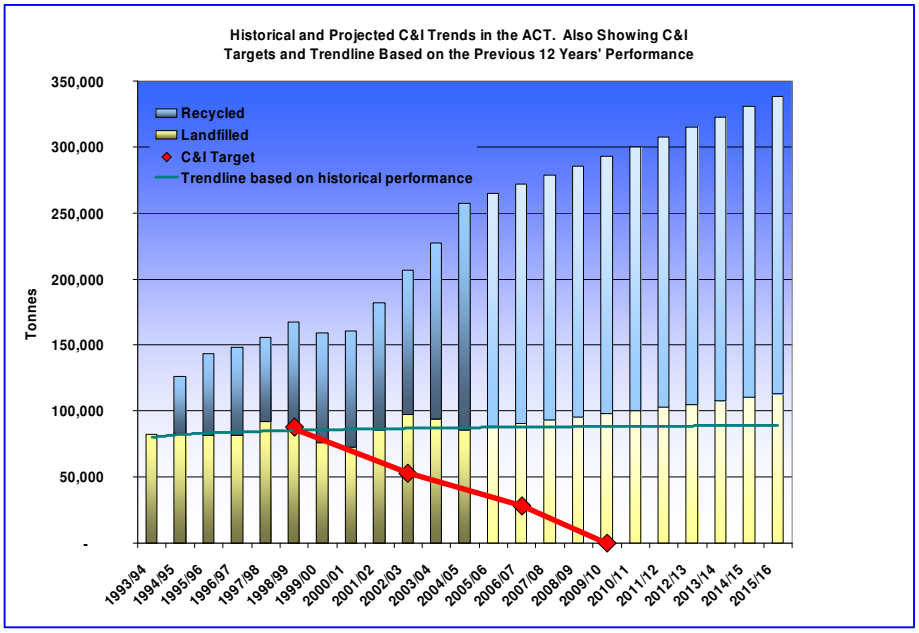




ACT

- Waste generation rates are growing rapidly
- Recycling rates are not fast enough to hit the targets
- ACT has the most aggressive targets in Australia
- Zero waste to landfill by 2010
- On current trends these cannot be achieved
- More than 100,000 tonnes of C+I waste needs to be diverted from landfill per year

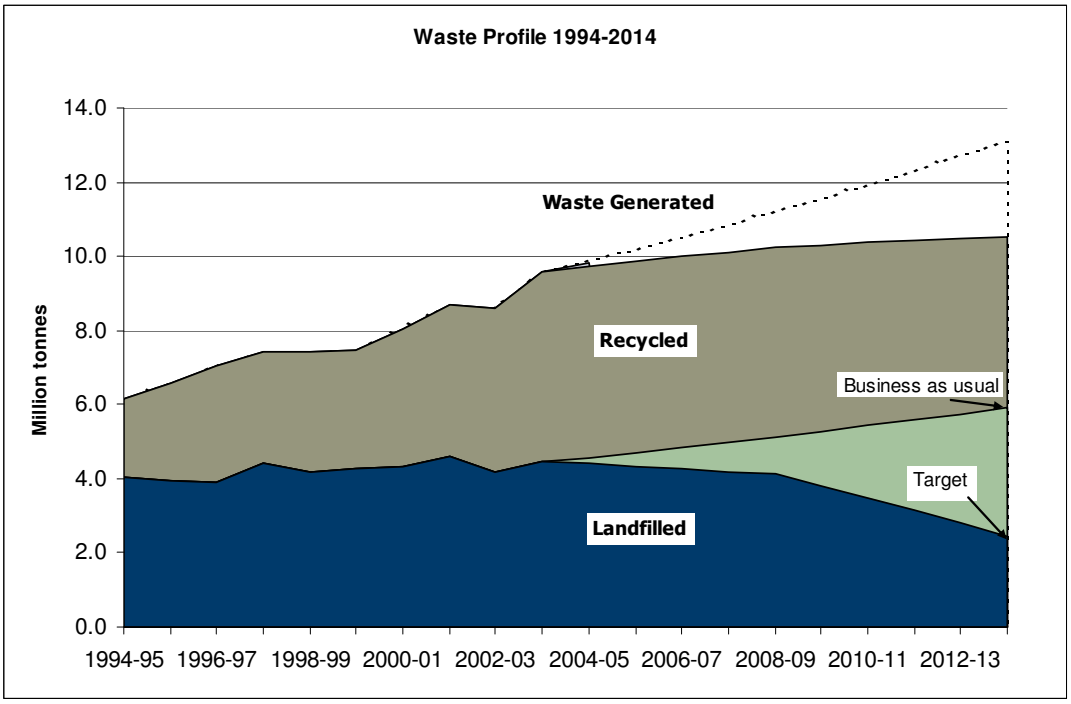




VICTORIA

Victoria is generating considerably more waste than can be recycled through current infrastructure

- Recycling tonnages have not increased markedly from 2004 – 2006
- Business as usual will see Victoria miss its target by more than 2 million tonnes per year
- Significant investment in new recycling infrastructure is required to achieve the targets



RECENT GOVERNMENT ACTION

The WMAA strongly supports responsible waste management. It recognises the efforts governments have made to reduce waste to landfill and increase resource recovery and recycling. WMAA also sees a long term role for well run landfills as infrastructure for final disposal of residual wastes.

A consensus is emerging in the industry around a range of policy principles including:

- The States will not hit their targets with the current policy settings
- Pricing signals or Market Based Instruments (MBI) need to be introduced
- Waste levies are the most easily implemented pricing signals but the level of hypothecation of funds needs to be dramatically increased in some states
- Monetising the externalities of all treatment and disposal options (via full cost accounting) should be incorporated into the pricing of each alternative
- Policy instruments such as regulation and Extended Producer Responsibility are important elements of the waste policy framework
- There is a significant need to improve small and medium landfill operations particularly in relation to greenhouse gas emissions and leachate control

State Governments have in the past few years started to act on some or all of these factors.

However, recent changes in waste levies have demonstrated that these governments recognise the need to act quickly by changing the economic and pricing signals in the market place:

- NSW waste levy increasing from $22/t to $58/t over 4 years to 2010
- VIC introduced a hazardous waste levy of $130/t
- SA recently doubled their levy to $20/t
- WA doubled its levy from $3 to $6/t
- QLD WMAA has proposed a levy
- Tasmania WMAA has proposed a levy
- ACT increasing waste disposal by $10/t per year, currently $80/t disposal

The next section summarises some of the recent changes in each state.

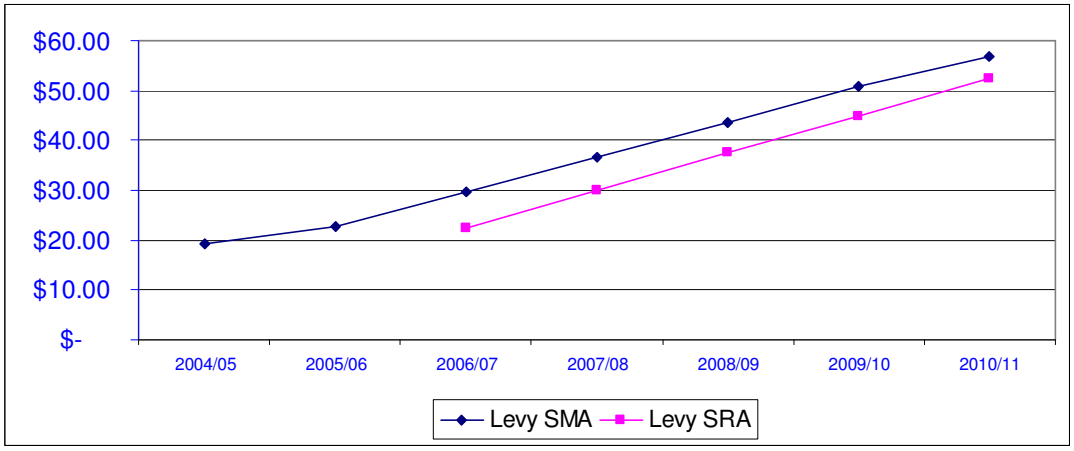
THE NSW LEVY EXAMPLE

All waste generators who dispose of waste to landfill in the Sydney Metropolitan Area (SMA) or the Extended Regulated Area (ERA) pay a waste levy.

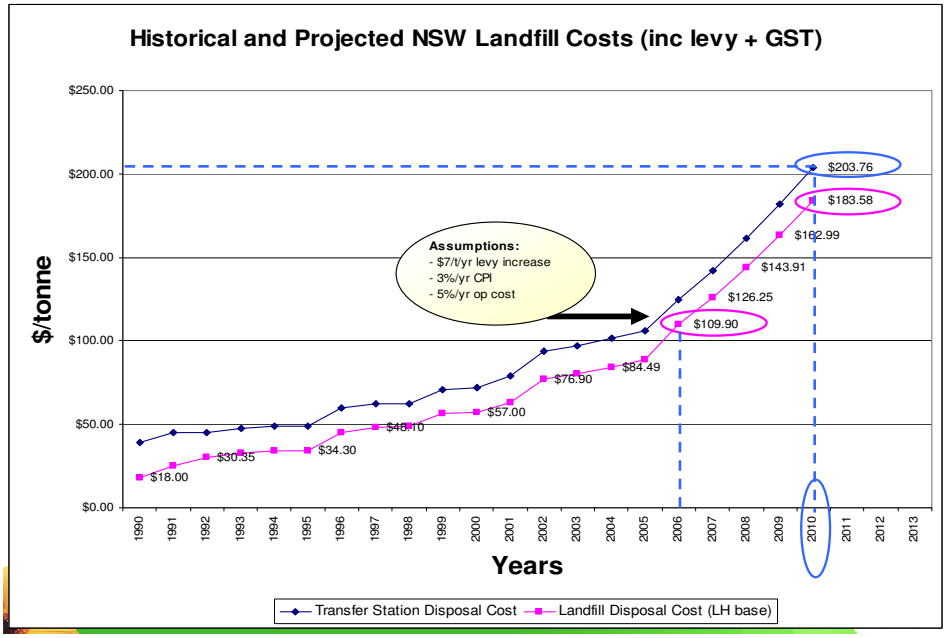
Municipal Solid Waste accounts for approximately 30% of the waste disposed of to landfill in the SMA and ERA and as such Local Government is paying some 30% of the total waste levy raised. The remaining 70% is paid by the Commercial and Industrial sector and the Construction and Demolition sectors of the economy.

A meeting of a wide diversity of waste and resource recovery industry CEO's in 2006 with the Director General of the NSW EPA, indicated strong support for an increase in the levy in order to drive reform and resource recovery.

In response the NSW Government announced significant changes to the NSW waste levy prescribing increases of $7 per year to $58/t by 2010.

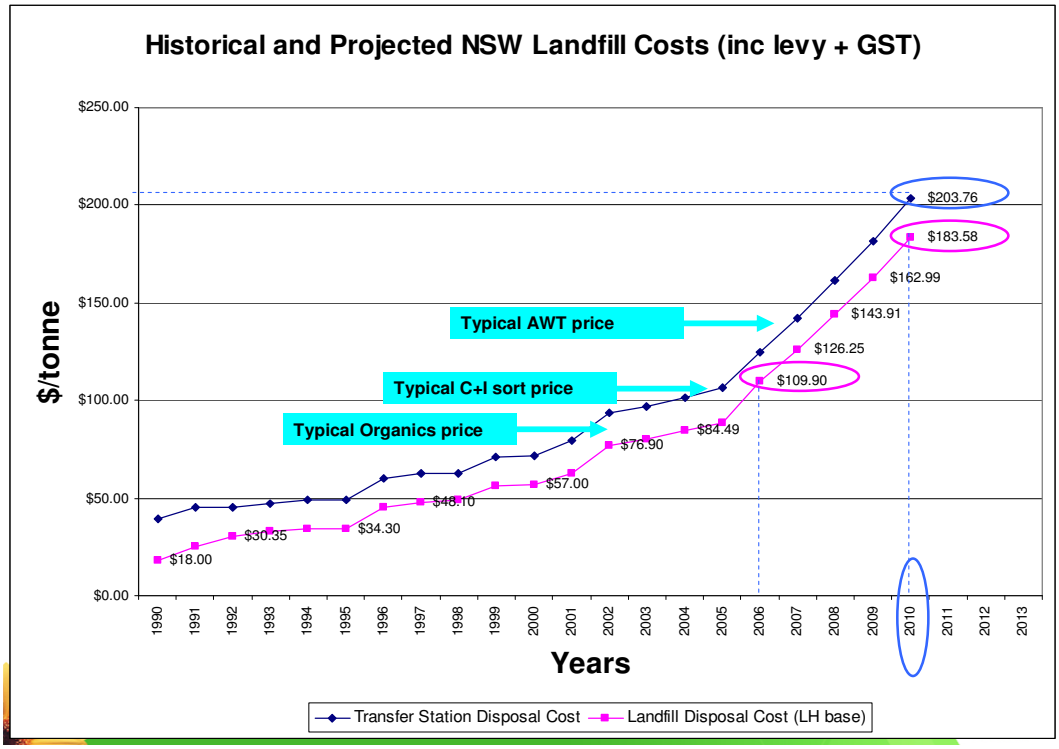


These increases in the levy (taken with other increases in landfill operating costs) will drive the cost of landfill disposal in NSW, from $90/t average upward towards $180 over 4 years (assumptions of 3% CPI and 5% growth in operating costs).



Using more conservative estimates (2.5% CPI and 2.5% operating cost growth) gives a landfill gate rate of $160/t in 2010.

With these increases in the levy and costs of landfill disposal recycling and AWT will be able to compete with landfill for disposal of waste in Sydney within a few years.



Level of hypothecation

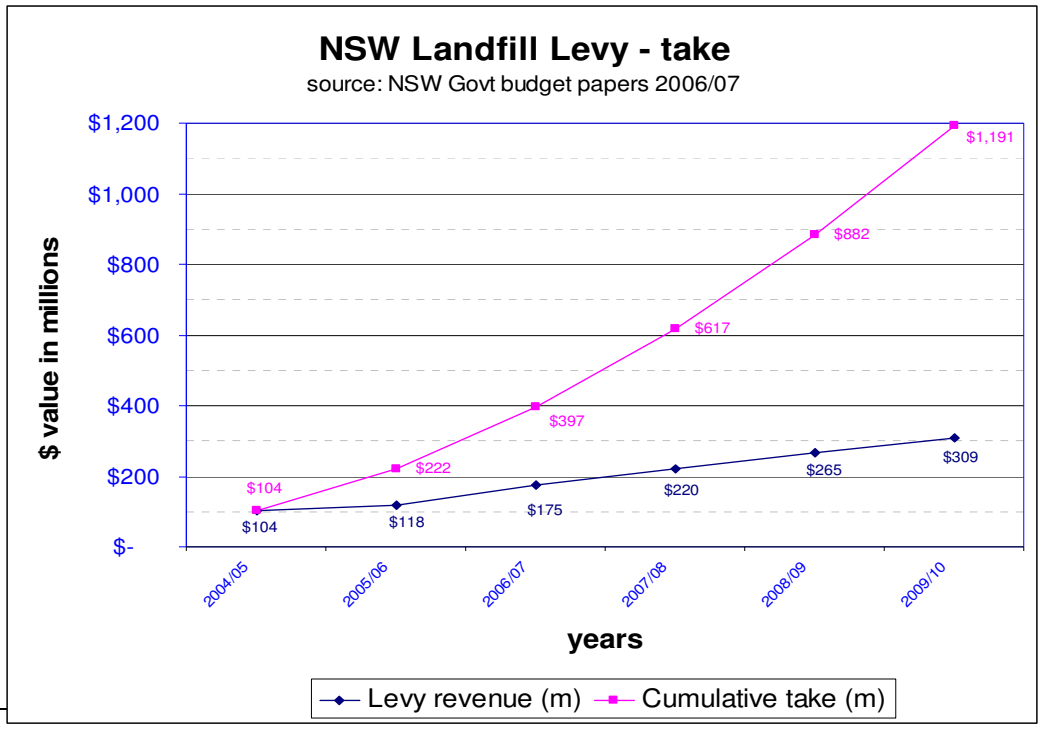
The initial intention of the waste levy in NSW was to generate funds for use in waste related activities. The NSW Government made an agreement with the Local Government Association of NSW that 55% of the levy funds raised would be spent on local government waste related activities.

The 55% payment of levy funds into the Waste Fund was short-lived and was halted in the 2003/2004 financial year, with some $60 million of unspent funds remaining.[2] The Waste Fund itself was abolished shortly thereafter under the Brigalow and Nandewar Community Conservation Area Act 2005, with remaining funds transferred to the Environmental Trust Fund.

The purposes of the Waste Fund are now discharged through the Environmental Trust Fund,[3] and compete with seven other core objectives for the $13.5 million of funds available (adjusted upwards for movements in the Consumer Price Index since 1997).

While the existence of the levy acts as a disincentive to landfill because of increased gate fees, it also acts as a revenue generator for government with more than $104 million of waste disposal levies paid each year into consolidated revenue in NSW alone. This figure will rise sharply over the next few years.

Over the 6 year period from 2005 to 2010 the NSW waste levy (based in published State Treasury Budget Papers 2005/06) the NSW government will raise more than $1.191 billion dollars from the NSW waste levy (refer figure below).



[2]

Of the $1.19 billion, $426 million has been allocated to the City and Country Environment Program dedicated to improving local environments, wetlands and some minor waste management programs.

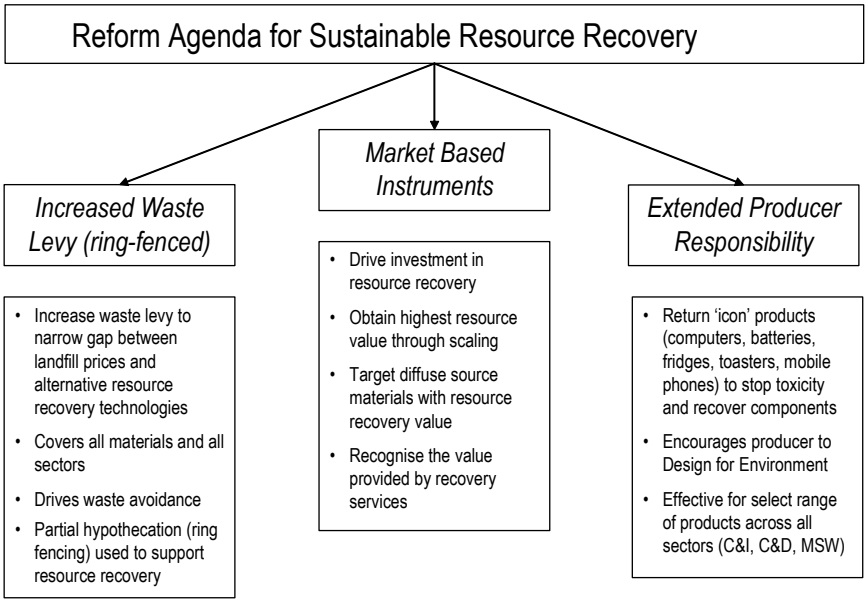
Less than $20 million has been allocated directly to waste related reform over the same period. That is, the proportion of waste related expenditure is less than 2%.

INTEGRATING WASTE LEVIES WITH OTHER WASTE POLICIES

This paper argues that waste levies are an important element of an integrated policy framework for landfill and resource recovery. This framework has three key elements:

1. a waste levy with hypothecation of a significant proportion of the funds raised
2. targeted market based instruments
3. extended producer responsibility schemes

The composition of this reform is further illustrated below. It is important to highlight that because of inherent limitations each element acting in isolation will not produce the desired reform. Rather, it is the combined effect of these mechanisms that present the greatest chances of improved sustainability outcomes in resource recovery.



Landfill levies

The role of a waste levy in supporting resource recovery outcomes includes narrowing the gap between landfill gate fees and those of alternative resource recovery technologies, influencing all materials from all sectors, driving waste avoidance, and financially supporting resource recovery initiatives when appropriately hypothecated.

Waste levies are sometimes decried as being a "blunt" instrument that does not differentiate between materials or directly influence the recovery of resources at their highest value. However, this 'bluntness' or broadness of application is exactly why the waste levy is a key component of reform.

For continuous improvement in sustainable resource recovery to occur, economy wide improvements in performance across all sectors and material types are required.

Waste levies, by virtue of their broadness of application, are the only mechanism that impacts all sectors and all product and material types, with no free-riders. They are, in effect, the final safety net to capture resource value before materials are wasted to landfill.

Levies place continuing pressure across the board to avoid waste generation in the first instance. This is a feature lacking from some Market Based Instruments (MBIs), for example tradable certificates, which have a narrower range of liable parties and are often applied to specific material types (for example UK LATS and BMW).

The existence of a large landfill levy does not preclude the use of MBIs or EPR to achieve specific outcomes. Using the UK as an example, their 'waste levy' will increase to £35 per tonne for Municipal Solid Waste, alongside implementation of LATS. The UK also operates Producer Responsibility Obligations which place responsibility for resource recovery on packaging supply chain businesses.

Increasing the waste levy has the additional advantage of speed of implementation. It can be done quickly, avoiding the five-to-ten years required to develop a tradable certificate scheme and sidestepping delays in developing EPR schemes. This allows more immediate benefits to flow through to the resource recovery industry and delivers immediate results to NSW.

MBI's

Market Based Instruments (MBIs) involve a range of mechanisms ranging from deposit/refund schemes to market friction reduction. However, the main interest and reference to MBIs in the current resource recovery debate revolves around the introduction of some form of tradeable certificate scheme, either one similar to the UK Landfill Allowance Trading Scheme (LATS) or one predicated on driving resource recovery.[4]

Such mechanisms could be designed to drive large scale investment in resource recovery infrastructure, transfer the cost of end-of-life management services directly to the consumer and producer, and provide a

financial reward for the value of services provided by the resource recovery sector. Importantly, MBIs can also be used to directly meet resource recovery and landfill diversion targets.

Tradeable certificate MBIs can be used over a wider range of product and material types than EPR, for example Biological Municipal Waste (BMW) as used in UK LATS, but need well defined liable parties to operate effectively. Using the UK landfill allowance trading scheme as an example again, the liability is placed on municipalities to divert increasing amounts of 'BMW' from landfill by setting a diminishing 'cap' of BMW landfilling rights. However there is no liability for municipalities to divert other material types from landfill or for other sectors to divert their BMW materials resulting in similar leakage of materials to landfill as shown below.

Well designed and implemented MBIs will drive investment into infrastructure and the meeting of targets but also face 'leakage' of material types and liable parties

While MBIs can be used to increase the amount of recovered resources used by manufacturers and to meet downstream resource recovery and landfill diversion targets, they will not cover all materials and sectors, allowing wasted materials to leak through to landfill. This highlights again the need for an integrated approach to reforming resource recovery.

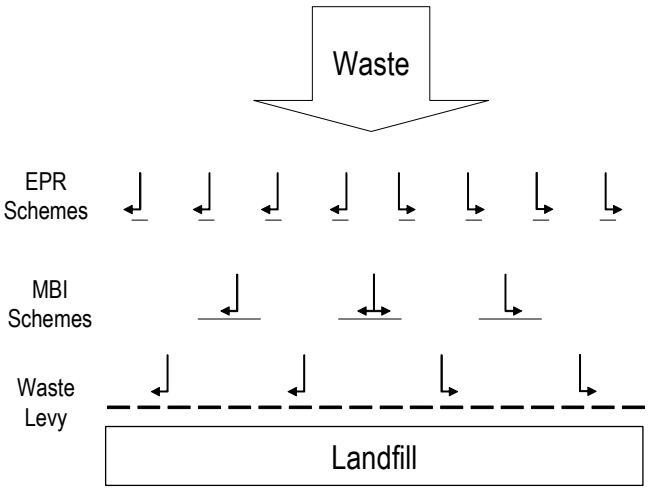
EPR

Extended Producer Responsibility (EPR – also referred to as Product Stewardship and Extended Product Responsibility) targets the return of 'icon' products, products that are widely distributed with high recognition or that are hazardous in nature, in addition to other important product types such as beverage containers. EPR has great precision in recovering products from the waste stream and can effectively influence design so that end-of-life considerations are included.[5]

EPR works best with clearly defined products that have a well defined and 'controllable' system of production and distribution, such as motor oil, tyres, certain packaging types and certain electrical and electronic items (for example, computers and televisions). However EPR schemes have leakage and will not capture all materials, for example food scraps or garden organics.

Summary

These three instruments waste levies, MBI's and EPR act in combination to divert the maximum percentage of waste materials toward resource recovery options, as shown below.



EPR targets icon and problematic waste materials with a high level of precision and effectiveness.

MBIs work to drive meeting resource recovery targets for specific sectors and specific materials groups.

Increases to the waste levy is needed at a sufficiently high level to impact all materials not influenced by EPR or tradeable certificate MBIs. Without this measure there will be less drive to continuously improve efficiencies of resource recovery or to implement waste avoidance actions for materials that would otherwise 'leak' through to landfill. Appropriately 'ring-fencing' a component of the levy will provide a double dividend of funds to fast track the transition to cyclical systems of production and resource recovery.

The waste levy acts as the final safety net to impact all material types not influenced by EPR or MBI schemes and provides pressure to continuously improve recovery rates and efficiency

BENEFITS OF AN INTEGRATED POLICY FRAMEWORK

The benefits of governments adopting all 3 mechanisms are outlined in the following table.

Benefits arising from an integrated approach	
Benefit	*Description*
Increased gate fees for resource recovery activities.	An increase in the waste levy will increase the cost of landfill and allow proportional increases in gate fees for recycling activities. This alone will make many marginal recycling activities financially viable and further consolidate the effectiveness of existing recovery initiatives.
Continuing pressure to avoid waste generation in the first instance.	The levy works across all industry groups and across all material types with no free-riders. This is a feature lacking from some Market Based Instruments (MBIs), for example tradable certificates, which have a narrower range of liable parties and are often applied to specific material types.
Use in combination with MBI's or EPR.	The existence of a large landfill levy does not preclude the use of MBIs or EPR to achieve specific outcomes. For example in the UK their 'waste levy' will increase to £35 per tonne for Municipal Solid Waste, alongside implementation of LATS. Furthermore the UK also operates Producer Responsibility Obligations which place responsibility for resource recovery on packaging supply chain businesses.
Pool of funds to invest in supporting sustainable resource recovery activities.	Introduction of waste levies are an effective means of raising significant amounts of money. These funds can be used to invest in a range of activities directly supporting sustainable resource recovery, including capital grants for infrastructure, community programmes, EPR and MBI schemes, and waste avoidance and cleaner production initiatives in the commercial and industrial sector.
Timeliness of implementation.	Increasing the waste levy has the additional advantage of speed of implementation. It can be done quickly, avoiding the time required to develop a tradable certificate scheme and sidestepping delays in developing EPR schemes, allowing more immediate benefits to flow through to the resource recovery industry and deliver immediate results to NSW.

ENHANCING THE EFFECTIVENESS OF WASTE LEVIES

Waste levies are more effective in driving change towards sustainable resource recovery if:

- they are set high enough to reflect all of the externalised costs that currently make landfill more competitive than resource recovery operations and
- they are appropriately 'ring fenced' to ensure that a proportion of funds raised by the levy get invested into activities that support sustainable resource recovery.

Where there is no hypothecation of the waste levy to improve resource recovery outcomes and where monies collected go directly into government consolidated revenue, the levy acts purely as a tax.

While levies have been generally accepted by the public and stakeholders as a necessary evil, there are a number of actions Governments could adopt to make the implementation of the levies more acceptable and their outcomes more desirable:

1. **Maximise the hypothecation of funds into resource recovery** – To avoid the accusation that the levy is a tax all Governments should maximise the level of hypothecation back to delivering the State waste strategies
2. **Stakeholder management of funds** – Establish an appropriately governed body with stakeholder representation from industry, government and environmental NGOs, to manage ring-fenced funds. The organisation's constitution would reflect the desired resource recovery and landfill diversion outcomes from increasing the levy.
3. **Local government infrastructure support** - Increased costs could be offset by investing part of the increased waste levy directly into resource recovery and landfill diversion initiatives within the local government sector. Such offsets would reduce the net levy payments from local government. Specific support for a range of infrastructure needs including:
    - transfer stations
    - materials recovery facilities
    - alternative waste technologies
    - targeted dollar per tonne recovery rebates
    - support for the transport of recyclables
    - assistance for resource recovery education
    - assistance for regional resource recovery
4. **Resource recovery infrastructure fund** – a multi-million fund available to support capital investment in resource recovery infrastructure

5. **C&I competitive grants** - a fund to support waste avoidance and resource recovery initiatives amongst commercial and industrial waste generators, particularly initiatives aimed at waste avoidance and other cleaner production activities

6. **EPR and MBI development fund** – a fund to support the development of extended producer responsibility schemes and tradable certificate market based instruments

7. **review of performance and outcomes** – a five year cycle to review performance outcomes against original purpose and intent of the waste levy.

8. **Improved landfill performance** – a multimillion dollar fund to support improvements to landfill management including leachate control, gas capture and post closure remediation. The Stern report (refer appendix) advised that the cost of CO2 emissions was in the order of A$110 per tonne. To capture the externality costs of methane gas emissions from landfills that would require an $81/t increase in landfill gate fees for all landfills which accept putrescible waste but do not have gas capture. Clearly there is a significant need for improved management and control of landfills (refer appendix)

CONCLUSION

This paper discussed the potential role that waste levies play as part of an integrated approach with extended producer responsibility, market based instruments in driving changes required to implement sustainable resource recovery systems.

It is not suggested that introducing or increasing levies are the only reform required to make the transition to cyclical patterns of production and consumption. Rather, waste levies are one step as part of a reform package that includes the continued implementation of extended producer responsibility schemes and the development of tradeable certificate market based instruments.

The challenge is to build a consensus position around the use and application of waste levies by all State Governments. At present there is a mixed degree of hypothecation of levy funds to delivering the State Waste Strategies.

Consensus would be much improved if each State documented the level of hypothecation and maximised it for productive purposes in improving the operation of waste and recycling activities.

Mike Ritchie, NSW President, Waste Management Association of Australia

0401 980 391, mike_ritchie@sita.com.au