

Investigation into the Transport of Waste into Queensland

Submission no. 0013

Name Queensland Treasury Corporation
(QTC)

Investigation into the Transport of Waste into Queensland

QTC SUBMISSION (SEPTEMBER 2017)

1 Introduction

Queensland Treasury Corporation (QTC) welcomes the opportunity to provide a submission to the Investigation into the Transport of Waste into Queensland (the Investigation). QTC is the Queensland Government's central financing authority and corporate treasury services provider, and has responsibility for:

- sourcing and managing debt funding to finance Queensland's borrowing requirements in the most cost effective manner, and
- providing financial and risk management advice and strategic advisory services to the Queensland Government and public sector bodies, including local governments.

This submission responds to the questions raised in sections 1(a), (c) and 2 of the Terms of reference of the investigation and provides further commentary on the broader issues with waste recovery and opportunities to improve waste management in Queensland.

This submission is based on a desktop review undertaken by QTC on the Queensland waste industry. The commentary in this submission focuses on trends and material differences in performance between Queensland and other Australian jurisdictions. The quality of waste data is an issue in all Australian jurisdictions and the confidence level for the accuracy, reliability and comparability of data is therefore moderate.

2 Current state of waste recovery in Queensland

According to the 2016 Australian National Waste Report (ANWR), Queensland's waste recovery rate of 48 per cent is the second lowest of the eight states and territories (see Figure 1). The disposal of waste into landfill represents a lost opportunity. It is estimated¹ that 10,000 tonnes of waste going into landfill supports 2.8 full-time equivalent (FTE) jobs. Recycling that same waste is estimated to generate 9.2 FTE jobs, in addition to reducing greenhouse gas emissions, avoiding the unproductive use of land and minimising potential environmental issues.

Key issues related to Queensland's performance include:

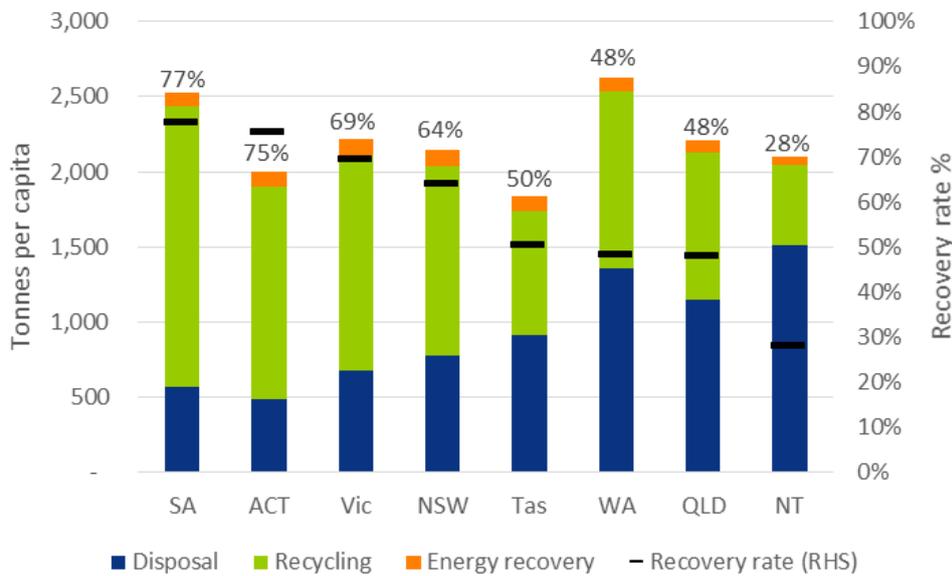
- Growth in Queensland's waste per capita has outstripped population growth by 11 per cent over the last eight years.
- The state's recovery rate is virtually unchanged since FY2008 and is almost 30 per cent below the top performing jurisdiction (South Australia, at 77 per cent).
- To reach the national average recovery rate (61 per cent), Queensland would need to recover an additional 1.5 million tonnes of waste, which is a 38 per cent increase on the volume currently recovered.
- Queensland's nominated recovery targets for 2024 would deliver an overall recovery rate of 63 per cent. This is below the recovery rates currently being achieved by the top four Australian jurisdictions.
- For almost every region and type of waste, Queensland's requirement for additional waste infrastructure to meet the nominated 2024 recovery targets has been assessed as significant.

¹ FTE estimates for types of waste were reported in a 2015 Deloitte Access Economics report, *Economic Effects of the South Australian solid waste levy*

Disclaimer: All opinions, statements, analyses and forecasts expressed in this paper are based on information from sources which QTC believes to be authentic. This paper is intended only to provide a summary of the subject matter covered. It does not purport to be comprehensive or to provide financial or other advice. Accordingly, specific professional advice should be obtained before acting on the basis of any matter covered in this paper. QTC issues no invitation to anyone to rely on this paper and intends by this statement to exclude any and all liability for any such opinions, analyses and forecasts. QTC does not provide legal, tax or accounting advice. Neither QTC nor any of its employees, contractors, servants or agents accepts any liability or responsibility whatsoever for any expense, damage, loss, claim, cause of action or costs incurred by a person arising out of or in connection with any use of, or reliance on, the information provided, regardless of whether such expense, damage, claim, cause of action, loss or costs arise out of, or in connection with, any act, omission or negligence of QTC, its employees, contractors, servants or agents. QTC is under no obligation or duty to notify anyone if there is any change in any information or any new information or if it forms a different opinion at any time after the date of this paper.

- For the nine months leading up to March 2017, Queensland received 527,000 tonnes of waste from New South Wales. On an annualised basis, this represents a 30 per cent increase on FY2016 and more than double the volume transferred in FY2015.

FIGURE 1: PER CAPITA WASTE GENERATION AND RECOVERY BY JURISDICTION - FY2015



Source: QTC using data sourced from ANWR 2016

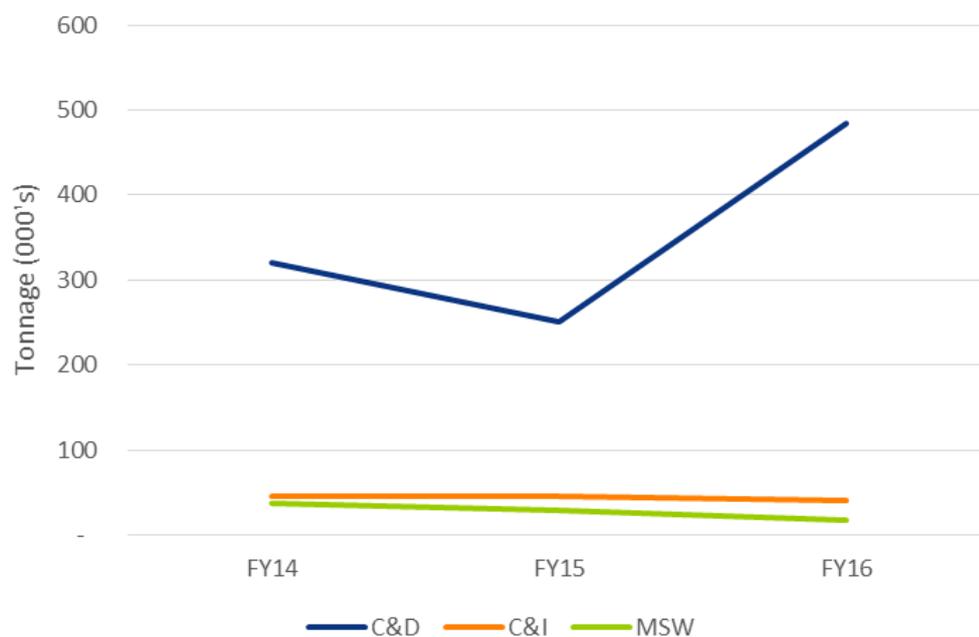
3 Drivers of the interstate waste movement

In FY2016, a total of 542,000 tonnes of waste was received at Queensland landfill sites from interstate sources — primarily construction and demolition (C&D) waste² (see Figure 2). This represents a 68 per cent increase from the 323,000 tonnes the prior year. The majority of the interstate flows went to privately run landfills in South East Queensland³. Extrapolating the data for the first three quarters of FY2017 to a full year, the tonnes transferred from interstate would be over 700,000 tonnes: an increase of 30 per cent on FY2016 and more than double (117 per cent) of FY2015.

² Note a portion of the C&D waste received in FY2016 was put through a recovery process. Approximately 124,000 tonnes of the 494,000 tonnes of C&D waste was recovered.

³ Source: Department of Environment and Heritage Protection: Recycling and Waste in Queensland 2016

FIGURE 2: THREE YEAR TREND OF WASTES RECEIVED BY QUEENSLAND LANDFILL OPERATORS FROM INTERSTATE SOURCES



Source: Department of Environment and Heritage Protection

3.1 Incentives for the movement of waste from other States to Queensland landfills

The lack of landfill levy in Queensland

Five of the eight Australian jurisdictions have a landfill levy/fee. Queensland is the only mainland State that does not impose a levy or tax on waste disposed to landfill. In the developed western European countries (global leaders in waste management), a landfill levy/ tax is generally one of the policy tools underpinning a suite of waste management policies to increase the capacity of the waste recovery. The levy is typically implemented several years in advance of a landfill disposal ban⁴.

A waste levy provides a strong economic signal by reflecting some of the external environmental costs of waste disposal and making waste avoidance, reduction and recycling more financially attractive than disposal to landfill. It is a key policy tool for driving waste diversion from landfill⁵.

The Queensland Government implemented an industry landfill levy on 1 July 2011 (\$35 per tonne) that was applied to the Commercial and Industrial (C&I) and C&D solid and liquid waste disposal. The landfill levy was repealed following a change of government in 2012. Implications of the landfill levy repeal included:

- The mothballing and scaling back of new facilities, predominately within the C&D recycling facilities, where facilities were no longer financial sustainable.
- Industry uncertainty around the economic settings for future investment in recycling infrastructure.
- A price signal that landfill is an acceptable option for the management of waste.
- Increasing interstate waste flows, as illustrated in Figure 2.

⁴ Source: Synergies economic consulting: Cost benefit analysis of the implementation of landfill disposal bans in Queensland, November 2014

⁵ Source: NSW EPA: NSW Waste avoidance and resource recovery strategy 2014-2021

Landfill gate fees are comparatively low in Queensland

In South East Queensland (20 landfill sites in 12 local government areas), the current published gate fees for commercial general or mixed waste are between \$98.80 and \$140 per tonne, with two exceptions: Somerset Regional Council charges \$55 per m³ and Gold Coast City Council charges \$200 per tonne for waste from outside the city limits. Seven of the landfill sites are owned and operated by private operators, which offer lower gate fees by quotation and negotiation (on average the gate fee per tonne for large amounts of unregulated waste is between \$35 to \$60 in private SEQ landfills).

The landfill gate fees in Queensland are low, compared to NSW (on average \$250 per tonne gate fee for landfill in Sydney metropolitan area, which includes the landfill levy amount of \$136 per tonne). Low landfill gate fees combined with the lack of a landfill levy in Queensland make it attractive for interstate waste to be transported into Queensland for disposal.

The Gold Coast City Council has recently adopted higher fees for users outside of the city's local government area to restrict waste importation (ie, interstate and adjacent local government areas) and improve service for city ratepayers.⁶ The fees for 'mixed and green waste from outside city limits' have increased from \$96.90 per tonne in FY2017 to \$200 per tonne in FY2018. This will likely reduce interstate waste flows into the Gold Coast, but not to other Queensland local government areas.

Policy and regulatory framework needs to be reviewed

The current Queensland Waste Strategy sets targets that, if realised, would significantly reduce the landfilling of waste, but there are limited financial or regulatory instruments to drive the change in behaviours required to achieve this. Additionally, there are no barriers to the interstate flows of waste to Queensland landfills or to the landfilling of recoverable materials.

Queensland is the only mainland state that does not impose a levy or tax on waste disposed to landfill and this policy divergence creates an environment of uncertainty for industry that is a further barrier to infrastructure investment in essential recycling facilities. The Department of Environment and Heritage Protection (EHP) is currently undertaking a review of the Strategy with a revised government led waste strategy planned for release in the near future.

The ANWR 2016 report sought the views of four peak associations (Australian Council of Recycling, Australian Landfill Owners Association, Australian Organics Recycling Association and Waste Management Association of Australia) on the current status of the industry, where it would be by 2026 and what are the challenges and opportunities. One observation made by the associations was the waste recovery industry is undermined by poor design of landfill levies. This issue encompasses Queensland's lack of a levy as well as levies being applied to unavoidable residues from recycling and leads to 'perverse outcomes' such as interstate waste trafficking.

No comprehensive monitoring and tracking of waste movements into Queensland to trigger prompt actions

EHP conducts an annual survey to gather aggregated waste data from waste operators across Queensland. For the monitoring and tracking of interstate waste movement, there is only limited reporting and tracking of interstate waste movements (eg, only tracking the tonnage and type of waste stream and not the origin of waste). In addition, not all licenced landfills have weighbridges, which is a contributing factor to the uncertainty surrounding the accuracy of the waste data. As a result, it is likely the reporting does not reflect current activity.

Overall it is recognised that poor quality of waste data is an issue across all Australian states and territories. The Commonwealth Department of the Environment and Energy (DoEE) prepares an Australian National Waste Report every three years. The report contains detailed waste management data and analysis that is drawn on by governments, industry and academics as a key information resource. The report identifies potential variability in the quality of the data provided, noting 'the level of uncertainty in some of the presented data is likely to be high'.

The withholding of appropriately detailed waste flow and infrastructure data is a barrier to robust options analysis and infrastructure investment decisions. This is primarily around the collection of waste flows from landfill and recovery sites, including the details of individual facilities and infrastructure characteristics.

A review and stocktake of the data sources, type of data being collected, data collection process and reporting outputs should be undertaken to gain a better understanding of the current short falls and identify the areas for improvement.

⁶ Source: Gold coast City Council: Adopted Report of the Gold Coast Water and Waste Committee Meeting on 14 June 2017

4 Learnings from other jurisdictions

4.1 Australian landfill levies

Landfill levies are applied in five Australian jurisdictions: South Australia, the Australian Capital Territory (ACT), Victoria, New South Wales and Western Australia.⁷ Table 1 shows the standard levies by region in each jurisdiction. Other than for the ACT, each jurisdiction has adopted a location based approach to their levy. This differential pricing between jurisdictions and regions creates perverse incentives and leads to waste trafficking from one area to another, as experienced in Queensland. In addition, those jurisdictions with landfill levies have an average recovery rate of 67 per cent, while those without have a recovery rate of 42 per cent. Having a levy would, prima facie, appear to have a positive impact on recovery rates.

TABLE 1: CURRENT LEVIES BY REGION - PRICE PER TONNE

	Metro	Regional	Remainder
NSW	\$135.70	\$78.20	Nil
ACT	\$90.55 - \$199.20	N/A	N/A
SA	\$76.00	\$38.00	\$38.00
Victoria	\$62.03	\$62.03	\$31.09
WA	\$60.00	Nil	Nil

Source: Each jurisdiction's website

Where the transfer of interstate waste to Queensland landfills is deemed to provide the most efficient or the optimal environmental outcome for waste processing, any potential land fill levy will need to be designed to avoid any unintended consequences (eg, inhibit best practice waste processing).

4.2 NSW proximity principle

To discourage waste operators from sending their waste to Queensland and avoiding the NSW landfill levy, the NSW Environment Protection Agency (EPA) introduced the 'proximity principle' in 2014 to make it an offence to transport any waste by motor vehicle more than 150 kilometres from where it was generated in the state. The principle however did not address the issue of transporting by rail. In 2015, the EPA investigated three rail yard operators within the Metropolitan Levy Area (MLA) regarding long distance transport of waste.⁸

Following a Federal Court challenge by a number of waste companies⁹, in 2016, NSW EPA announced its intention to repeal the proximity principle regulation, but that it would introduce additional obligations on levy-liable waste facilities that wish to claim a transported waste deduction and seek to have regulations apply to the transporters of waste.

The NSW proximity principle was well intended but not effective. There is an opportunity and a need to examine other complementary measures and harmonise the policies, laws and regulations on waste management with other jurisdictions.

⁷ The levies in Tasmania are optional for councils to impose and, at a maximum of \$5 per tonne, are not considered material in influencing market behaviour.

⁸ Source: Lucy Cormack, 'NSW waste still travelling across state borders prompting EPA investigations', *The Sydney Morning Herald*, 14 February 2016 <<http://www.smh.com.au/environment/nsw-waste-still-travelling-across-state-borders-prompting-epa-investigations-20160212-gmsnyn.html>> at 17 September 2017

⁹ Source: Noni Shannon and Sonali Seneviratne, 'NSW proximity principle repeal: Environment Protection Authority set to repeal the proximity principle as part of reform of the Waste Regulation', Norton Rose Fulbright, November 2016 <<http://www.nortonrosefulbright.com/knowledge/publications/143940/nsw-proximity-principle-repeal-environment-protection-authority-set-to-repeal-the-proximity-principle-as-part>> at 17 September 2017

4.3 European Union waste shipment regulation

The European Union (EU) approach to exporting and importing waste within and outside the EU is based on the following principles¹⁰, and could serve as a useful framework for Australia:

- EU Member States must be self-sufficient in waste disposal capacity individually
- waste for disposal should be handled in one of the nearest disposal installations
- exporting hazardous waste from EU to non-OECD (developing) countries for recovery is prohibited
- the authorities in the countries of dispatch, transit and destination must be notified and provide consent to all shipments of wastes for disposal and of hazardous waste for recovery, and
- shipments of waste for recovery can be shipped within the EU without any prior notification procedure.

To fuel their Energy from Waste (EfW) plants, EU members like Sweden and Netherlands are permitted to import residual waste that other EU Member States cannot reuse or recycle. Transboundary waste shipments are allowed with prior consent from the authorities of the countries concerned by the shipment.

EU's approach to transboundary waste shipments is not without challenges, particularly illegal waste movements. For example, electronic waste (e-waste) is normally classified as hazardous and therefore it is illegal for EU member states to export it to non-Organisation for Economic Co-operation and Development (OECD) countries.

5 Possible reforms and measures

For a number of years, the waste industry has called for a national waste reform program to harmonise policies, laws and regulations for consistent management of waste across the States and Territories. A federal system where constitutional provisions prohibit restrictions on trade between jurisdictions means transportation of waste must be dealt with through cooperation and agreement by all jurisdictions.

The Waste Management Association of Australia (WMAA) has recently launched a 'Waste of Origin' pledge that will ask industry participants and stakeholders to commit to dispose of waste as close as possible to where it was generated. The pledge will stay in force until 31 December 2017 to spur action by governments.¹¹

To limit or control the cross-border movement of waste, legal and regulatory instruments should be considered. For example the EU waste directive — self-sufficiency in waste disposal and recovery within each jurisdiction, and cooperative arrangements between authorities across the jurisdictions.

A financial instrument, such as a landfill levy for Queensland, should also be considered to:

- a. remove the current commercial incentive for private operators transporting waste over long distance where most profits or cost savings can be made, and
- b. to encourage alternative investments to landfill within Queensland.

Based on indicative numbers in Figure 3, the current arbitrage opportunity of disposing the waste generated from NSW in Queensland is approximately \$102 per tonne (this assumes no pre-processing/ sorting in NSW prior to going to landfill in Queensland). Figure 3 also indicates that the current gap between traditional landfill and higher order uses (eg, composting and energy from waste) is approximately \$42 per tonne for green waste composting and \$152 per tonne for energy from waste incineration.

A landfill levy, if set appropriately, could provide price signals and make the waste recovery and recycling industry more commercially viable. Alternatively, local governments and other landfill owners/operators could be encouraged to set higher landfill gate fees to better account for the full life cycle costs and limit interstate waste transfer (similar to the Gold Coast City Council). The benefit of a levy is that any funds received by the State could be used as part of a State-wide program to redirect and reinvest in landfill alternatives including technologies, infrastructures and education programs.

¹⁰ Source: European Environment Agency, *Movements of waste across the EU's internal and external borders*, EEA Report No 7/2012, 2012

¹¹ Source: James Thomson, 'Waste industry to cease cross-border dumping', *Australian Financial Review*, 15 September 2017

FIGURE 3: INDICATIVE WASTE DISPOSAL/ TREATMENT COSTS IN QUEENSLAND VS NSW



Source: QTC prepared from various sources

While the terms of reference of this investigation is limited to the transport of waste into Queensland, other complementary measures (eg, product stewardship and polluter pays principle) should be considered to move waste management up the waste hierarchy, as set out in the Queensland Waste Strategy. The outcome of this investigation could inform the review of the Queensland Waste Avoidance and Resource Productivity Strategy 2014 -2024 by EHP. The broader waste management issues and potential measures are outlined in Section 6 below.

6 Waste management and complementary measures

This section summarises some of the approaches in other jurisdictions that have been used to deal with movement and management of waste, as contemplated in 1 (c) of the Terms of reference.

6.1 High level global trends of successful waste management

This section provides a summary of the global trends in waste management identified from the desktop review.

The waste hierarchy

The waste hierarchy underpins all good practice waste strategies and it is prominent within them. The priority of the waste hierarchy is to first stop waste being produced, then encourage recycling or recovering value from as much of the waste as possible before final disposal¹².

Product stewardship

There is an increasing trend to conserve resources used in manufacturing and reduce the harm from disposal of products used in manufacturing. Programs are generally influenced by political and legal factors, such a shortages of landfill capacity.¹³ In addition, the position adopted by jurisdictions is that of 'polluter pays'.

¹² Source: Sinclair Knight Merz: International Waste Strategy Benchmarking 2012

¹³ Source: Baker & McKenzie: Global trends in recycling and landfill regulation, May 2015

The concept of product stewardship can be applied very broadly beyond bottles to items such as paint, toxic waste and tyres. In countries such as Germany, laws require attention to the comprehensive outcome of the whole extraction, production, distribution, use and waste of a product and hold those profiting from these activities legally responsible for the outcomes along the way.

The most familiar example of product stewardship is the container-deposit schemes (CDS). Countries such as the United States and a number of European states have had successful CDS's in place for decades, resulting in highly effective rates of container return under most schemes. Queensland's version of the CDS is due to come into force in Queensland in July 2018.

Circular economy approach

A circular economy is an alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life¹⁴.

The circular economy rests on three principle, each addressing several of the resource and system challenges that industrial economies face. The three principles are:

- Principle 1: preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows.
- Principle 2: optimise resource yields by circulating products, components, and materials at the highest utility at all times in both technical and biological cycles.
- Principle 3: foster system effectiveness by revealing and designing out negative externalities.¹⁵

Landfill levies

Landfill levies have been identified as effective economic instruments to provide price signals to generate increased investment in processing and recycling capacity. Waste industry bodies are supportive of hypothecation of a landfill levy, with the proceeds used to help drive resource recovery. However in practice countries and various states within Australia have tended not to fully hypothecate the levy amount.

Landfill levies have been introduced and gradually increased over time to incentivise alternatives to waste disposal. A general trend is to combine levies with other instruments (such as landfill bans) to encourage greater waste avoidance and resource recovery¹⁶.

Landfill bans

Many countries have adopted landfill bans for general material streams (such as biodegradable or recyclable wastes), not just hazardous or difficult materials (eg, clinical waste or tyres)¹⁷. Bans have typically been introduced a number of years after a levy as part of a well-co-ordinated waste strategy and program¹⁸.

In most cases, ban compliance and data provision rests with landfill operators. When combined with complementary instruments, bans have been highly successful in diverting waste from landfill.

Energy from waste

In Europe, EfW or otherwise known as 'waste-to energy' is a vital element for waste disposal, in some cases representing greater than 50 per cent of municipal waste treatment. In Europe more than 20 million people (primarily from Belgium, Denmark, Germany, Netherlands, Norway and Sweden) are provided with heat and electricity generated by 420 EfW plants.

Energy recovery from waste is typically lower on the waste management hierarchy — more favourable than disposal to landfill but less favourable than the options of avoidance, re-use and recycling. Therefore, it should only be appropriate for residuals (eg, wastes that have no other resource value or where resources have been recovered).

¹⁴ Source: The Waste and Resource Action Program (WRAP), 'WRAP and the circular economy' <<http://www.wrap.org.uk/about-us/about/wrap-and-circular-economy>>, WRAP 2017

¹⁵ Source: <https://www.ellenmacarthurfoundation.org/circular-economy/overview/principles>

¹⁶ Source: Baker & McKenzie: Global trends in recycling and landfill regulation, May 2015

¹⁷ Source: Sinclair Knight Merz: International Waste Strategy Benchmarking, 2012

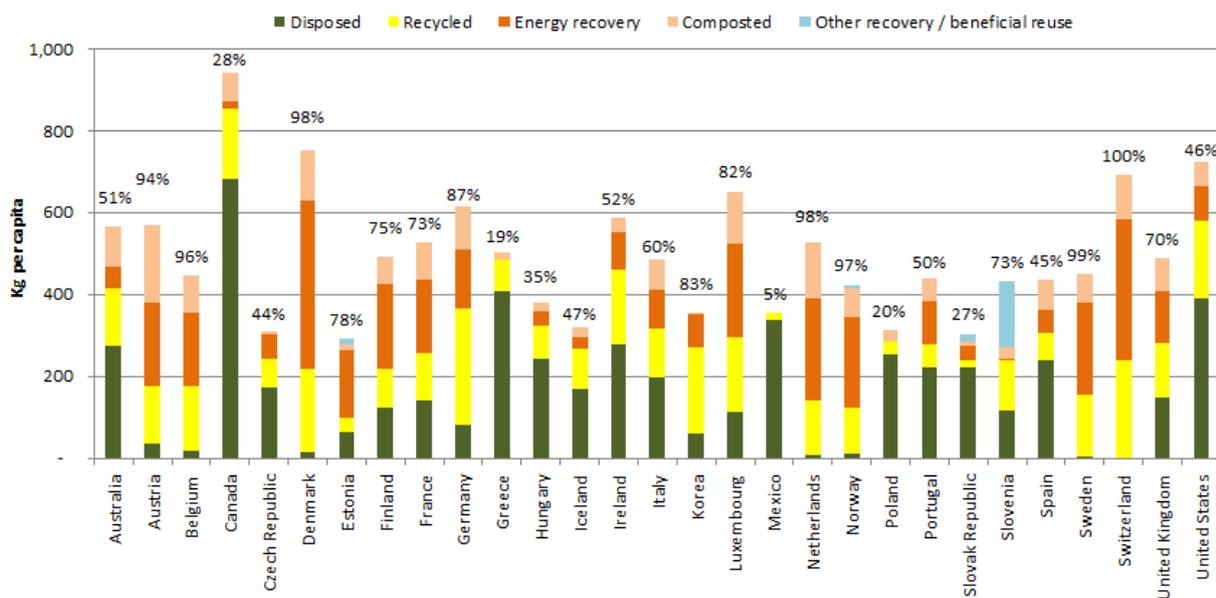
¹⁸ Source: Synergies Economic Consulting: Cost-benefit analysis of the implementation of landfill disposal bans in Queensland, November 2014

6.2 Key success factors in European waste management

European countries are generally regarded as having higher rates of waste diversion and lower rates of waste disposal to landfill than is typically reported in other countries.

This is evident in Figure 4, which compares the Municipal Solid Waste (MSW) disposed, recycled, recovered and composted per capita in Australia against 28 OECD countries. In recognition of the success many European countries have had, this section provides a summary of their successful policies and innovations used in waste management.

FIGURE 4: COMPARISON OF MSW GENERATION, DISPOSAL, RECYCLING, RECOVERY AND COMPOSITING PER CAPITA IN SELECTED OECD COUNTRIES



Source: National Waste Report 2016

European waste and recycling policy is characterised by a supportive set of environmental and economic instruments that are, when used together, a key driver in their performance¹⁹. Giroux Environment Consulting undertook a review of the successful policies and innovations used in waste management. The findings of the report are summarised below:

Policy

- national /regional waste strategies, plans and legislation
- explicit policy linkages made between enhanced waste diversion and resource efficiency and sustainable materials management, and
- legislated waste diversion targets and indicators.

Elements/ instruments

- high landfill gate fees related to site availability, capacity and policy
- landfill levies, which are designed to financially support and drive increased waste diversion
- fewer, more regionalised and engineered disposal sites with higher environmental standards
- widespread operation of EfW facilities with tip fees often “competitively” priced with landfill disposal, and
- competitive Extended Producer Responsibility schemes (product stewardship schemes specifically holding the producer responsible) established by policy or through engagement by competition authorities.

¹⁹Source: Giroux Environment Consulting: State of Waste Management in Canada, 2014

Support

- dedicated authorities with broad waste reporting, research & diversion enhancement authority, often funded by landfill taxes/levies
- regular reporting on waste diversion and waste disposal, and
- less regulatory distinction between residential and non-residential (C&I) sources.

6.3 Instruments required for effective waste management in Queensland

In Queensland, the trends since data collection began in 2008 show increasing volumes of waste are being generated while limited progress has been made with the overall recovery rates. The absence of a landfill levy in Queensland has resulted in increased transfers of waste from other states. In addition, without a consistent national approach on levies, the uncertainty created for industry may be acting as a drag on lifting the recovery rate.

There is significant global evidence illustrating how effective a landfill levy is in deterring the disposal of waste in landfills. However, a levy alone is unlikely to achieve optimal results in driving broader resource recovery and efficiency.

There are a number of factors which have been identified to develop a successful waste management system, some of which are summarised below:

Data

- There is a need for higher quality waste data to help make informed decisions and to monitor progress more accurately against targets in the waste strategy.

Landfill levy

- a levy is a key policy tool for driving waste diversion from landfill
- landfill levy funds can support investment in much needed infrastructure, encourage innovation and research in development, and provide education and informative tools to shape recycling behaviour
- clarity and clear direction for use of levy funds is required, and
- a levy has been a key financial instrument used by all jurisdictions with higher recovery rates.

Other elements

- adoption of principles around 'polluter pays' and product stewardship
- adoption of complementary measures, including landfill disposal bans
- intergovernmental agreements around policy frameworks and roles and responsibilities of the Australian, Queensland and Local Governments, and the responsibilities of the waste industry
- clear and consistent policy to provide investment certainty
- high quality planning frameworks
- consideration of EfW projects as an opportunity for residual waste
- a regional approach to planning and funding for waste infrastructure, and
- consideration for how best to handle the specific issues related to waste processing in regional and remote communities.

Achieving optimum results will take time and require government to provide a consistent policy approach and offer industry certainty to support significant investment decisions. Success will also rely on a significant stakeholder engagement to attain industry and public support. Successful jurisdictions are also adaptive to changes in behaviours and unintended consequences, adjusting their policy and instruments accordingly.