

**Submission  
No 170**

## **INQUIRY INTO 'ENERGY FROM WASTE' TECHNOLOGY**

**Organisation:** MRA Consulting Group

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## ***Submission to the NSW Parliamentary Inquiry into 'Energy from Waste' Technology***

MRA Consulting Group (MRA) is one of Australia's leading environmental consultancy firms, specialising in all aspects of business and policy reform. We are experts in waste, resource recovery and technology, climate change, carbon and sustainable development, and our vision of the future is one that is both environmentally sustainable and economically rational.

MRA has been involved in a number of Energy from Waste (EfW) projects, from policy advice to feasibility studies and has contributed to the public discussion around EfW and its place in the Australian waste management landscape<sup>1</sup>. We appreciate the opportunity to make a submission to the NSW Parliamentary Inquiry into 'Energy from Waste' Technology and would be happy to provide further information upon request.

- *the current provision of waste disposal and recycling, the impact of waste levies and the capacity (considering issues of location, scale, technology and environmental health) to address the ongoing disposal needs for commercial, industrial, household and hazardous waste*
  - **There is correlation between the waste levy and the size of the recycling sector:**
    - NSW demonstrates this with the highest levy and the largest recycling sector in Australia;
    - The introduction and withdrawal of a waste levy in Queensland resulted to a measurable spike and subsequent drop in recovery; and
    - As highlighted in Appendix A, each state's waste diversion, closely tracks changes in the levy value. MRA believes that the NSW waste levy needs to continue to rise to drive economic imperative. We suggest a \$1-\$2/year increase, extension of the levy to all of NSW and continued hypothecation of part of the proceeds towards infrastructure development, waste education and regulatory enforcement.
  - 566,000 tonnes of waste were transported into Queensland<sup>2</sup>, proving the effectiveness of price signals in influencing behaviour. This cheap disposal option greatly undermines the NSW waste sector, particularly the investment in recycling infrastructure. MRA recommends that levies are harmonised across the nation, and that the levy liability of a waste is determined by where it was generated, not where the disposal takes place.<sup>3</sup>

<sup>1</sup> As an example refer to <https://blog.mraconsulting.com.au/2016/04/12/energy-from-waste-in-australia-is-there-a-future/>

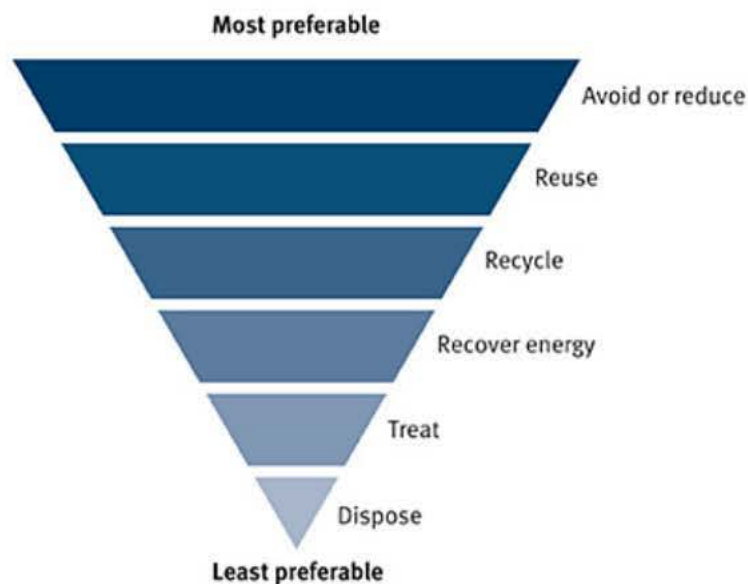
<sup>2</sup> Recycling and Waste in Queensland, 2016

<sup>3</sup> For more information refer to <https://blog.mraconsulting.com.au/2017/05/22/interstate-waste-to-queensland-up-40-in-one-year/>

- *the role of 'energy from waste' technology in addressing waste disposal needs and the resulting impact on the future of the recycling industry*

MRA supports the traditional 'waste hierarchy' concept (refer to waste pyramid below), which ranks methods of handling waste.

In line with this hierarchy, MRA believes that energy should be recovered from waste once further material recovery is not feasible. MRA agrees that energy recovery should be done in a safe manner, managing risks to the environment and human health. The NSW EfW Policy Statement shares the same priorities and in order to maintain the integrity of the waste hierarchy, the policy restricts input material into energy recovery facilities. This ensures that energy recovery does not affect the recycling industry.



- *current regulatory standards, guidelines and policy statements overlooking 'energy from waste' technology, including reference to regulations covering:*
  1. *the European Union*
  2. *United States of America*
  3. *international best practice*
- MRA agrees with the NSW EfW policy's three core principles for energy recovery facilities:
  - Ensure further material recovery is not financially sustainable or technically achievable;
  - Ensure there is no risk of harm to human health or the environment; and
  - Conduct genuine energy recovery.
- Suggested improvements are:
  - Define the term 'processing facility' in the context of eligible materials; and
  - Revise the resource recovery criteria for source wastes provided in Table 1 of the policy. These criteria are unclear and inefficient. In its current form, Table 1 does not differentiate between disposal of waste at a landfill and higher order resource recovery measures.
- EfW technologies have matured considerably, particularly grate and fluidised bed incineration systems. There are an estimated 1,000 such plants operating internationally. International experience has shown

that they do not cause air or water pollution if operated to European Incineration Directive standards. Large incinerators are currently operating within kilometres of the CBD in Paris, Vienna and elsewhere providing electricity and heat to the surrounding areas and minimising waste truck travel as other types of waste management facilities (such as landfills and MBTs) are commonly located in excess of 40km of CBDs.

- *additional factors which need to be taken into account within regulatory and other processes for approval and operation of 'energy from waste' plants*
- EfW can offset dependence on fossil fuels and thus provide carbon abatement. The electricity and/or heat supplied by potential EfW plants as well as the fuel displacement should be considered.
- The energy which could be recovered from residual urban wastes (waste which remains after recycling and resource recovery has taken place) has the potential to only meet 2-3% of NSW's energy demand, but the electricity provided will be continuous baseload power.
- EfW facilities can be sited close to where the waste is generated therefore reducing the need for waste transport, minimising truck traffic and rail movements, and the need for associated infrastructure such as waste transfer stations.
- Regulatory checks are necessary to prevent cannibalisation of recycling.
- EfW can reduce Australia's GHG emissions by up to 46.7 MT CO<sub>2</sub>e<sup>4</sup>
- *the responsibility given to state and local government authorities in the environmental monitoring of 'energy from waste' facilities*
- MRA considers the NSW state government to be best-suited for the oversight, approval and monitoring of EfW facilities. The NSW state government (through the NSW EPA) can assess the environmental, health and other impacts on a larger scale as compared to a local government authority. They would also be better placed to discuss the state's emissions policies and requirements.
- *opportunities to incorporate future advances in technology into any operating 'energy from waste' facility*
- Technological advances in EfW can usually be incorporated without any issue, as these facilities have a modular design, with discrete pieces of equipment that can be replaced over time.
- *the risks of future monopolisation in markets for waste disposal and the potential to enable a 'circular economy' model for the waste disposal industry, and*
- There are sufficiently high barriers to entry (i.e. gaining the required approvals, high cost of infrastructure) that discourage competition in the waste sector in Australia. If competition is to be encouraged, these high barriers should be addressed.
- EfW facilities will increase competition for waste, as they provide an additional alternative to landfilling.

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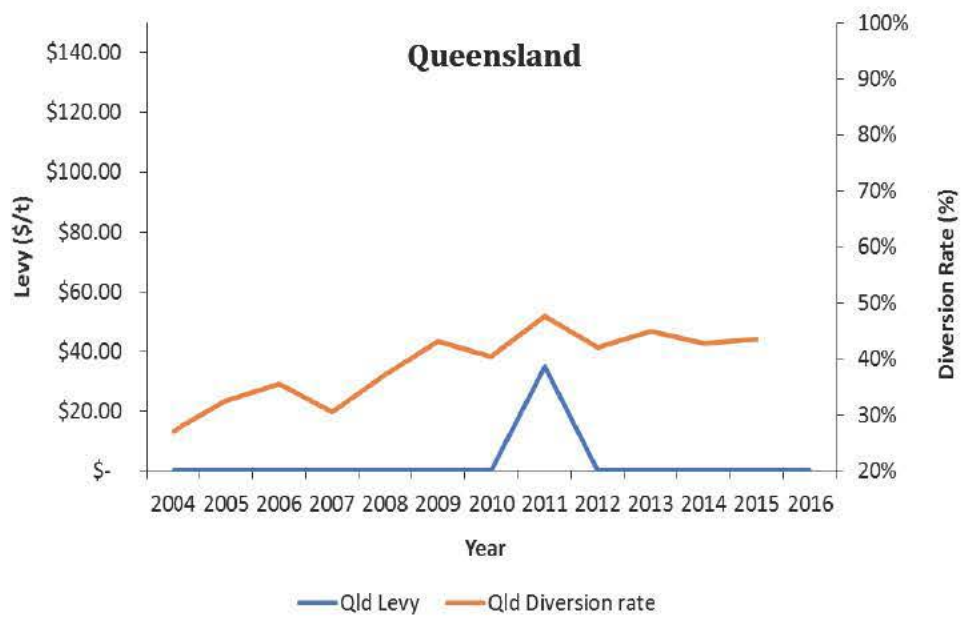
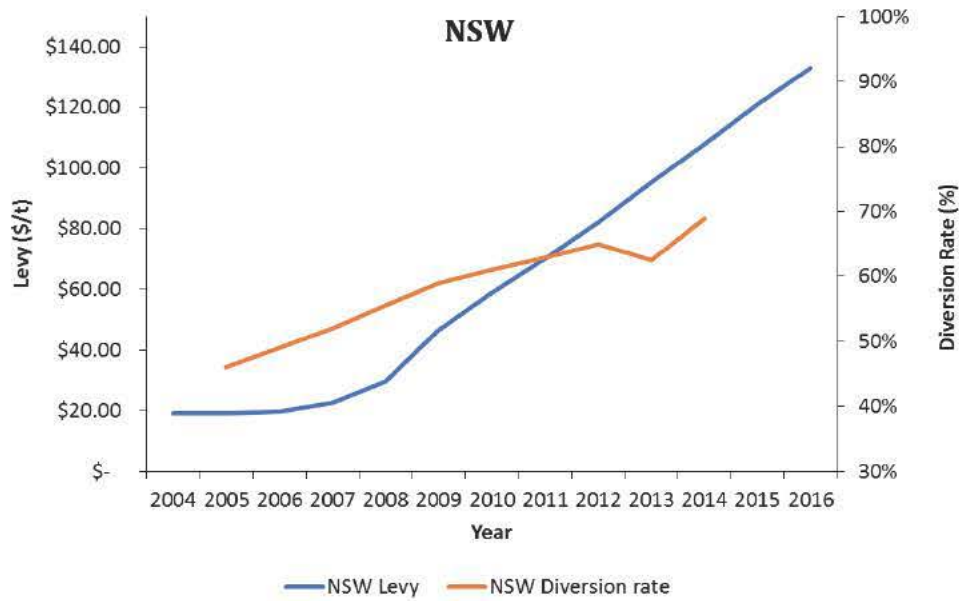
<sup>4</sup> <https://blog.mraconsulting.com.au/2015/03/24/energy-from-waste-efw-can-deliver-9-abatement-of-australias-emissions/>

- *any other related matter*
- A key concern underpinning the state of waste management in Australia is that the latest reported national data (the Australian Government's Waste Generation and Resource Recovery in Australia Report) is from 2010/11. The lack of up-to-date data<sup>5</sup> undermines the Governments' (Federal, State and Local) and industry's ability to fully assess the current demand for waste disposal services and systematically and pre-emptively identify and address any gaps in infrastructure.
- To encourage investment in EfW facilities, MRA recommends the development of an infrastructure SEPP (State Environmental Planning Policy) for waste and EfW, this should include insights from the recent infrastructure needs assessment undertaken by the NSW EPA. MRA recommends that the EPA publishes this assessment.
- In Asia and Europe, EfW facilities are often procured by councils or groups of councils. Councils and ROCs (Regional Organisation of Councils) should be provided with greater guidance from government on the procurement of regional infrastructure, and given the authority to lead in the consolidation of residual wastes to ensure the long term financial viability of all waste processing infrastructure..
- Pyrolysis (an EfW technology) is the only known technology with the ability to reverse climate change by converting timber, plant products and other organic materials into non-labile carbon which can be sequestered back to land as biochar (with a greater than 20,000-year residence time). For this reason, MRA recommends that research in Pyrolysis be increased.
- Gasification technologies are increasingly prevalent but do not yet have the coverage or regulatory history of combustion systems.
- State government leadership in the EfW space is necessary to create the environment for investment. Policy, pricing and limitations on cheap landfill disposal (e.g. waste to Qld) are required to provide an attractive investment environment.

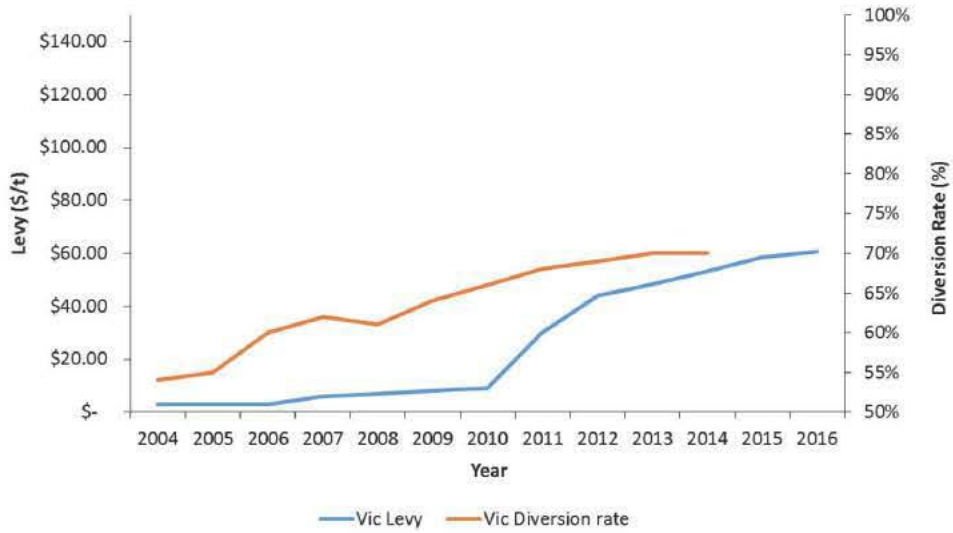
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<sup>5</sup> For more information refer to <https://blog.mraconsulting.com.au/2017/03/29/the-state-of-the-waste-data/>

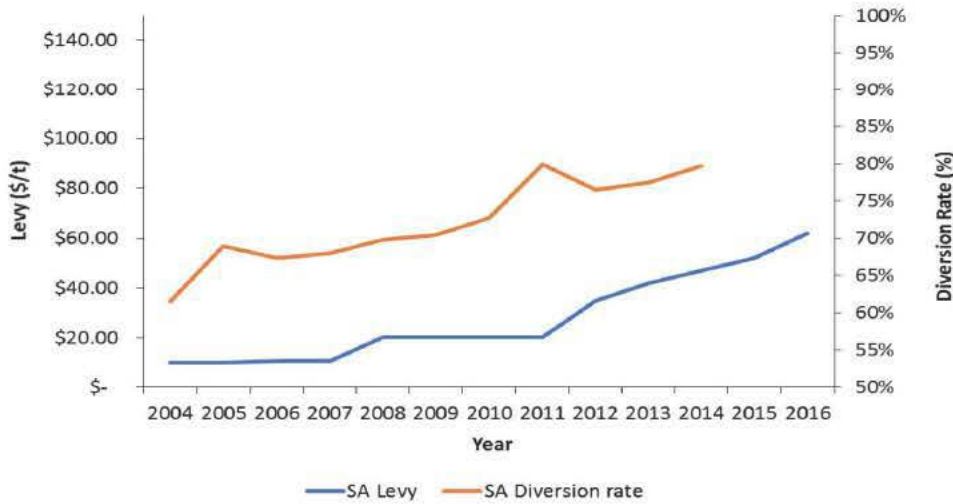
## Appendix A – State Waste Levies



### Victoria



### South Australia



### Western Australia

