

This document was originally submitted to the Committee on Environment and Planning inquiry into and report on the sustainability of energy supply and resources in NSW.

It is now presented to the Department of Planning, Industry and Environment as feedback on options to address the problems facing the NSW waste industry and to assist in the development of a 20-year Waste Strategy for NSW. The cornerstone of this submission is that the Hunter Region will become a world-scale centre for the conversion of waste to energy and the recycling of waste materials, during the transition away from the global use of coal.

1. The Hunter 2019

The Hunter Valley “Coal Chain” ([Coordinator website](#)) comprises:

1. A plentiful supply of fresh water from Glenbawn dam. With a capacity of 750,000 megalitres this is one of the largest dams in Australia.
2. Around forty world-scale coal mines which have been in production for a substantial number of years.
3. An extensive rail network linking individual mine sites to the Port of Newcastle.
4. A workforce of 9000 people skilled in heavy engineering and the handling of large amounts of material and associated machinery and equipment.
5. An electricity transmission network providing capacity for 40 per cent of NSW requirements.
6. A handling facility in the Port of Newcastle capable of 160 million tonnes per annum of coal combined with other bulk commodities.

2. The Hunter 2020-2040

It is now well recognised that electricity production from coal-fired power stations will enter a period of decline. However, coal mine closures should be determined by economic decisions by the mine owners rather than overriding political concerns. In any event it is likely that the transition from a coal-derived economy in the Hunter could span twenty years or more. It could well require a timetable of this order to plan, implement and bring into production a range of industries which will ensure there is little or no contraction in one of Australia’s largest skilled workforces.

A recent report by EY entitled [How we can find the treasure in our trash](#) stated:

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

It is hoped that COAG’s leadership will provide much needed direction and stimulus, to start the process of solving the current crisis and helping Australia build a functioning and productive resource recovery market for waste. A commitment to local processing, and the creation of local markets for hundreds of thousands of tonnes of recovered materials represents a considerable challenge.

However, it all starts with recognising recyclable materials as a valuable resource and not merely as a burden.”

This submission introduces a concept which could satisfy the need of a strategic role for the Hunter in a specific area of the Australian economy which has already been recognised as one of the major problems faced by every State:

THE HUNTER VALLEY WILL BECOME A WORLD-SCALE CENTRE FOR THE CONVERSION OF WASTE TO ENERGY AND THE RECYCLING OF WASTE MATERIALS.

The new industry for the Hunter, Hunter Waste Removal, (“HWR”) would combine:

1. The transport of waste which would normally enter landfill as well as pre-sorted plastics, metal and paper, by road, rail and sea.
2. This would remove a growing problem from Sydney, other parts of NSW and eventually other States. It would provide a replacement destination for the 4.3 million tonnes of waste which is sent overseas.
3. Landfill waste would be fed into waste-to-energy plants close to power station sites to provide immediate cover for the replacement of electricity from coal-fired power stations.
4. Specialised plants on current mine sites would process recyclables and would have existing dedicated rail links as well as road access via the Hunter Expressway and proposed Singleton and Muswellbrook bypasses.
5. An economic multiplier effect would be created by the formation of new businesses to use the recycled material in the production of replacement goods.

The introduction of this waste removal and recycling network can be achieved by the use of existing proven technologies already in operation both in Australia and overseas. These processes have been shown to have excellent performance in meeting environmental controls, and would provide for long overdue improvements in Hunter air quality and reduced contamination by dust.

3. Technology available for Waste to Energy and Material Recycling

The technology already in use could be transferred to Australia for use in HWR operations:

General demonstration of the Waste to Energy plant provided by London Waste Limited

[Video on waste to energy](#)

1. Shenzhen (China) with an expected completion date in 2020:

[Video on proposed Shenzhen plant](#)

[Further details of Shenzhen plant](#)

2. Outotec has provided 140 installations of waste to energy plants ([Link to Outotec website](#)):

[Video on Outotec waste to energy plant](#)

3. Covanta (Dublin) waste to energy plant

[Video on Dublin waste to energy plant](#)

4. Veolia will operate the first waste to energy plant in Australia

[Link to Veolia in Kwinana](#)

5. An additional waste to energy plant is also proposed in Western Australia

[East Rockingham energy-from-waste facility](#)

Equally there are many examples of the application of modern technology in the recycling of a wide range of waste materials:

1. Recycling Centre in London, Ontario (Canada)

[Video on Canadian recycling centre](#)

2. Recycling Centre in Brooklyn, NY (USA)

[Video on USA recycling centre](#)

There are already large-scale recycling operations in Australia:

1. Visy Recycling

[Link to Visy website](#)

2. Recycling by Global Renewables (Eastern Creek)

[Link to Global Renewables website with video](#)

3. Plastic recycling in Victoria

[Largest plastic recycling plant in Australia](#)

4. Recycling by Veolia

[Link to Veolia recycling operations](#)

5. Recycling plant in Somersby, NSW

[Link to iQRenew](#)

Australia is poorly ranked as a recycler. In the following article Germany reported its recycling rate as 65% in 2017. Australia, however, reported a rate of only 42%, showing that there is considerable room for improvement (but the Federal Government estimate was for a rate of 55% in 2018).

[Article on recycling around the world](#)

Recycling waste and waste conversion is clearly good for the nation and with strict environmental controls and the use of proven technology the Hunter population's fear of further degradation of the region can be allayed. HWR plants can be located in the more remote areas of mine sites so the visual impact is minimised.

4. National Waste Report 2018 (Australian waste)

This report supplies considerable information that would justify a major investment in HWR in the post-coal era.

National Waste Report

1. The economic implications of increased recycling modelling by the Centre for International Economics (2017) suggests that a 5% increase in the recycling rate could add \$1 billion to Australia's gross domestic product.
2. In 2017-18 exports of waste materials for recycling grew by 97 kt (2.3%) to reach 4.3 Mt. There were increases in exports of scrap metals (14%) and plastics (2%) but paper and cardboard exports fell by 9%.
3. NSW is focused on supporting a high performing and responsive waste industry, backed with an \$802 million investment under Waste Less Recycle More (WLRM) to support a range of initiatives in waste management.
4. *Improving the resilience of NSW recycling.* In 2018 China began enforcing its National Sword policy, restricting the types of recyclable material it will accept, and its decision is presenting global challenges that are impacting recycling in NSW. In response, on 20 March 2018, the Minister for the Environment announced a one-off package of up to \$47 million to support local government and industry respond to China's policy. The package funds a range of initiatives to ensure kerbside recycling continues and to promote industry innovation. The NSW EPA is also leading an inter-governmental Taskforce to find a longer-term response to China's policy, in partnership with industry and councils. The Taskforce is working towards innovating and improving recycling and recycling markets in NSW by:
 - examining the use of recycled products in Government procurement
 - developing a circular economy policy for NSW
 - identifying opportunities to increase NSW's recycling capacity
 - examining the need and options for longer term funding solutions.
5. *Waste management in 10 years.* Waste management in 2028 should be a flourishing and economically viable industry, which contributes economically via more local jobs and increased demand for products made from recycled materials; environmentally through reduced quantities of waste going to landfill, and more waste re-entering the product-lifecycle following a circular economy model, and socially through acknowledging the good efforts and practices by Australian householders and local government service providers.
6. The Australian waste and resource recovery sector managed about 55 Mt of waste in 2016-17, including about 32 Mt through recycling and most of the rest through landfill. Based on a major report for the Department, the value of the sector's activities in 2014-15 was about \$15.5 billion, comprising \$12.6 billion from service provision and \$2.9 billion from sale of recovered materials (CIE 2017). The value added by waste-related activities was \$6.9 billion, accounting for 0.43% of Australian gross domestic product (GDP). The sector directly employed almost 50,000 people (full time equivalent terms), accounting for about 0.5% of total employment. About 20% of waste related activity was undertaken by local government.

7. *National harmonisation of waste policy.* Waste has traditionally been managed locally, and most waste policy and regulation is developed by states and territories. Increasingly, however, waste is moving across borders and national industries are facing waste management issues in multiple jurisdictions. With support from the states and territories, the Australian Government is spearheading efforts to harmonise policy and regulation to ensure rational and efficient management. An updated National Waste Policy is to be released with this publication. Consistent national data and reporting is part of this effort. Harmonisation in the hazardous waste area is particularly important, since many of the markets for processing these materials are national.
8. The long-term trend in waste management is towards increasing levels of recycling and, driven by public demand and government policy, there is little reason to imagine this will change. Of course, for some materials the cost of recycling is high and the benefits are low. However, there are plenty of wastes for which resource recovery can be significantly increased to the benefit of the community, including food waste, skip bin materials and e-waste. The high cost of energy is likely to drive the development of energy from waste facilities, particularly in areas with limited landfill airspace. As well as potential mass-burn operations, there may be a market for facilities using niche, high-calorific waste streams such as timber, textiles and hard-to-recycle plastics.

5. SUMMARY

The Hunter Valley provides the ideal location for a world-leading waste removal industry that will establish new global standards

At present the Hunter is recognised as an efficient and extensive supplier of coal to a number of the world's largest economies. As these countries limit the consumption of fossil fuels in the provision of their energy needs, the Hunter will be required to transition from an economy based on coal production to a broadly-based group of industries which can transform the wide range of wastes created throughout Australia into reusable materials and energy.

A summary of the Hunter provided by the "Committee for the Hunter".

[Link to the region at a glance](#)

The 2018 National Waste Policy provides a framework for collective action by businesses, governments, communities and individuals until 2030.

The policy identifies five overarching principles underpinning waste management in a circular economy. These include:

- Avoid waste
- Improve resource recovery

- Increase use of recycled material and build demand and markets for recycled products
- Better manage material flows to benefit human health, the environment and the economy
- Improve information to support innovation, guide investment and enable informed consumer decisions

In 2003 the City of San Francisco set a goal of zero waste by 2020. As a result of the success of this programme, the city is close to realising this objective.

[Zero-waste case study: San Francisco](#)

[Recycling in Sweden](#) also demonstrates a record of success in recycling waste.

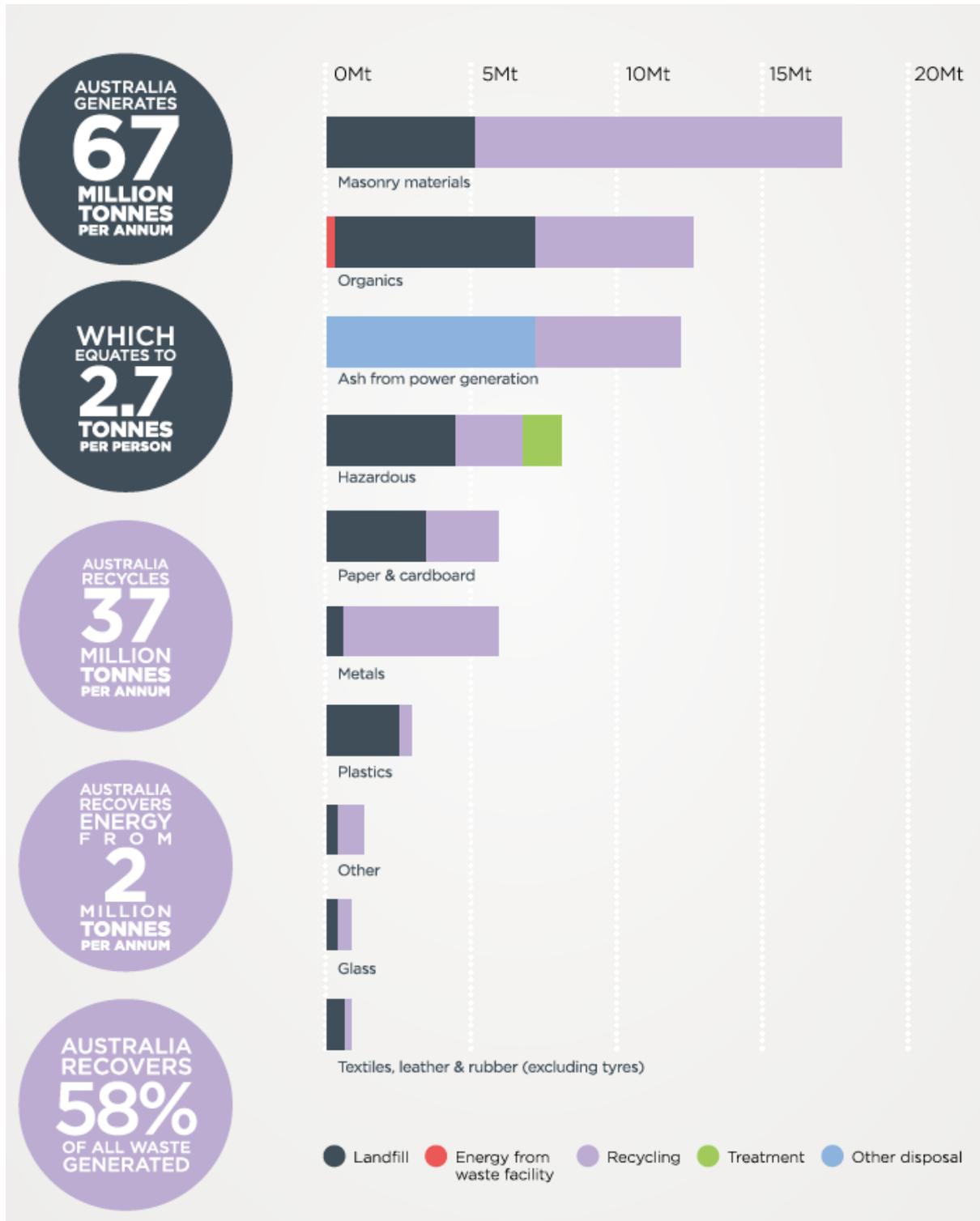
The 2018 National Waste Policy will guide continuing collaboration between all Australian governments, business and industry. It does not remove the need for governments, businesses and industries to implement tailored solutions in response to local and regional circumstances:

“The sector directly employed almost 50,000 people (full time equivalent terms), accounting for about 0.5% of total employment. For every 10,000 tonnes of waste that is recycled, 9.2 jobs are created (compared with 2.8 jobs if the same amount of waste was sent to landfill).”

Recycling of an amount of waste equivalent to that which is presently exported would create over 4000 jobs in the Hunter. Exporters reported to customs the exported materials in 2018 were 4.42 million tonnes, worth \$2.8 billion, and this is expected to increase to \$3.17 billion in 2019.

The Hunter can satisfy the requirements needed to embark on a major programme of waste recycling and waste to energy conversion and at the same time ensure that a valuable workforce is retained in this region. The region would also gain a much-improved environment and help to satisfy the need to provide for a National Waste Policy as required by the Australian Government.

An extract from National Waste Policy 2018



In providing this feedback I acknowledge the dedicated efforts shown by the many people who have combined to produce the “Hunter Renewal Roadmap” (<https://www.hunterrenewal.org.au/>).