



[TCCS.BDU@act.gov.au](mailto:TCCS.BDU@act.gov.au)

Dear TCCS,

### **Information Paper: waste-to-energy (WtE) in the ACT**

I am pleased to provide this response to your information paper on Waste-to-energy (WtE) for the ACT.

This information paper is the *starting point* of a journey into a complex technical and societal matter. I note that there is considerable community interest in the proposal, as evidenced by previous media and commentary and as outlined in the submission provided in the Conservation Council's newsletter.<sup>1</sup>

In this submission I flag several issues which require detailed, specialist, focused, analysis. This response does not purport to comment on the full spectrum of issues relating to WtE technologies or their applications in specific circumstances.

It is my view that there is a need for further robust technical analysis and in-depth meaningful consultation through development of the policy. Thorough and careful assessment of infrastructure options is needed to ensure that the ACT's commitment to a comprehensive and implementable 'waste hierarchy' has been addressed prior to any infrastructure development being approved. Our waste production, associated as it is with our consumption patterns, is unfolding as a major issue for the ACT (and other jurisdictions) and its resolution requires serious specialist assessment.

**Along with others, I submit that burning 'waste' to produce energy must be a last resort.**

I note the following points from this paper:

- The ACT can achieve a peak maximum in reducing, reusing and recycling waste of around 80%.
- This leaves a remaining 200,000 tonnes per year of waste which at present is expected to go to landfill.
- Presently waste to landfill is 300,000 tonnes per year.
- The ACT is unlikely to meet 90% waste 'recovery' without WtE.

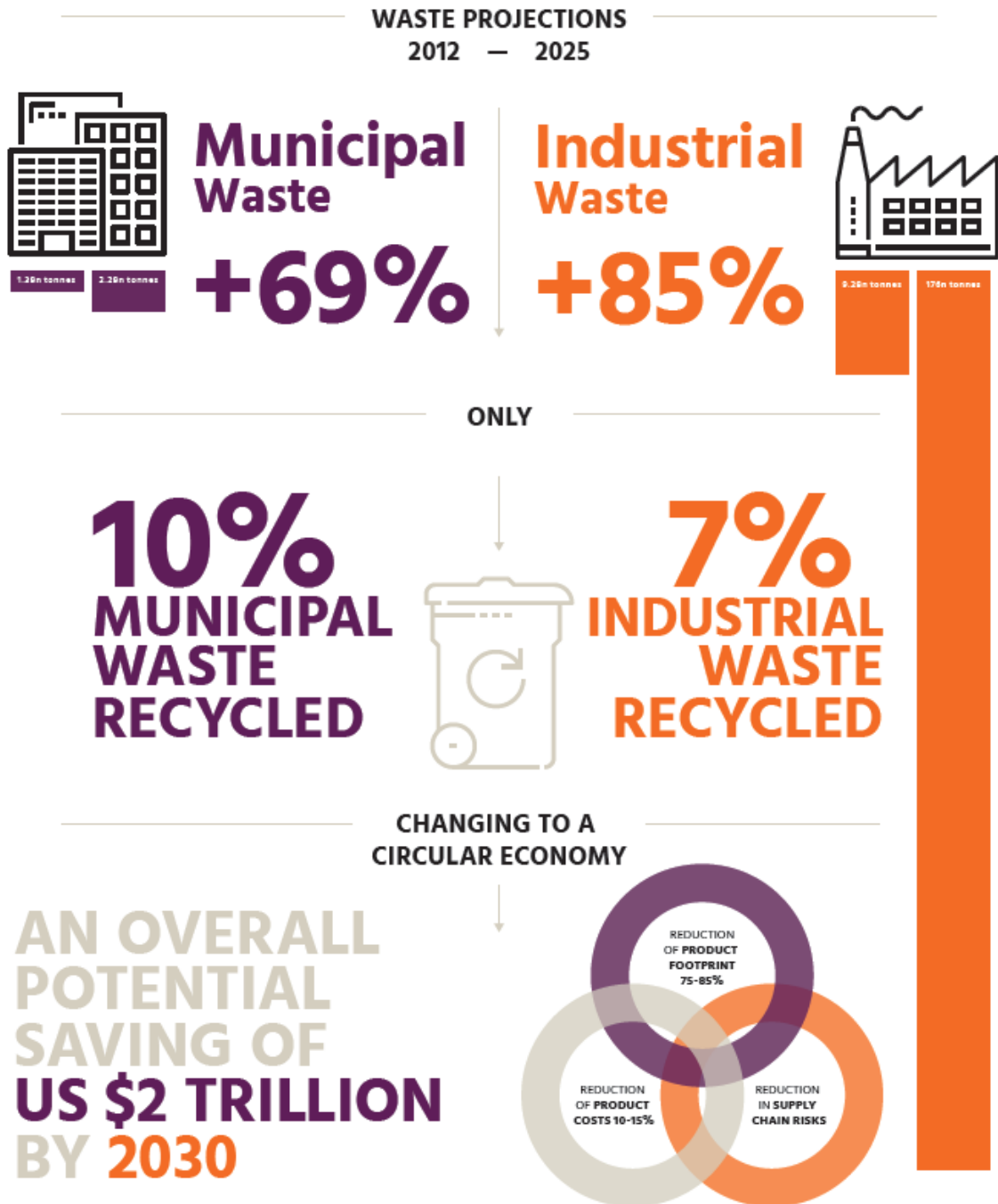
**I strongly suggest that much more can be done to reduce waste through education, awareness, cleaner manufacturing, green procurement and embedding a circular economy.**

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<sup>1</sup> <https://conservationcouncil.org.au/wp-content/uploads/2017/09/20171209-Reducing-Waste-Canberra-Briefing-Paper-FINAL.pdf>  
accessed 22 November 2018



Linear business models mean **INCREASED CONSUMPTION, LEADING TO MORE WASTE.**



Source: [theguardian.com/sustainable-business](https://www.theguardian.com/sustainable-business)

## **Embedding a Circular Economy**

Experts in the field - the Ellen MacArthur Foundation in its CE100 (Circular Economy) project – have identified collaboration as a foundational element of the successful transition to a circular economy.<sup>2</sup>

**The ACT Government must take a leadership role in this regard with their own operations, particularly through procurement, and this requires both policy and regulatory commitment.**

A mixture of regulation and policy levers has been recognised as essential in delivering transition by one of Australia's biggest corporations – Australia Post (see its 2018 Annual Report; its Environmental Action Plan 2018-2020 (June 2018); and its report 'Transitioning to the Circular Economy. Insights from the frontline' (November 2017)).

The European Union is heavily committed to the circular economy and ensuring that waste to energy options are upheld to the most stringent standards. I point to their recent communication to the European Parliament: *The role of waste-to-energy in the circular economy* for guidance. It notes:

*Member States with low or non-existent dedicated incineration capacity and high reliance on landfill....should give priority to further development of separate collection schemes and recycling infrastructure.*<sup>3</sup>

**The ACT is relatively well progressed in in separate collection schemes and recycling infrastructure but needs to maintain efforts.**

## **Waste to Energy in the ACT**

As noted in the paper, WtE already occurs in the ACT<sup>4</sup> and that there are various technologies available. These include landfill gas extraction, in-vessel anaerobic digestion, pyrolysis, gasification and direct combustion.<sup>5</sup> The figures over page illustrate how the Mugga Lane landfill captures methane generated by decomposing organic matter and combusts that methane in the onsite power station.

In the last 12 months to 30 June 2018, the Mugga Lane landfill gas power station generated enough electricity to abate and avoid more than 100,000 tonnes of carbon dioxide equivalent, power 5,600 homes or remove 33,000 cars off the road per year.<sup>6</sup>

However, the recent FOY Group<sup>7</sup> and Capital Recycling Solutions<sup>8</sup> proposals both received significant public criticism and have been withdrawn from consideration.

**I am a strong advocate of ensuring that projects are assessed on their own merits.**

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<sup>2</sup> <https://www.ellenmacarthurfoundation.org/ce100> accessed 28 November 2018

<sup>3</sup> <http://ec.europa.eu/environment/waste/waste-to-energy.pdf> accessed 8 November 2018

<sup>4</sup> <http://serree.org.au/projects/renewable-energy-trail/mugga-lane-landfill-gas/> accessed 23 November 2018

<sup>5</sup> [https://www.environment.act.gov.au/\\_data/assets/pdf\\_file/0007/576916/ACT-Waste-Strategy-Policy\\_access.pdf](https://www.environment.act.gov.au/_data/assets/pdf_file/0007/576916/ACT-Waste-Strategy-Policy_access.pdf) 23 November 2018

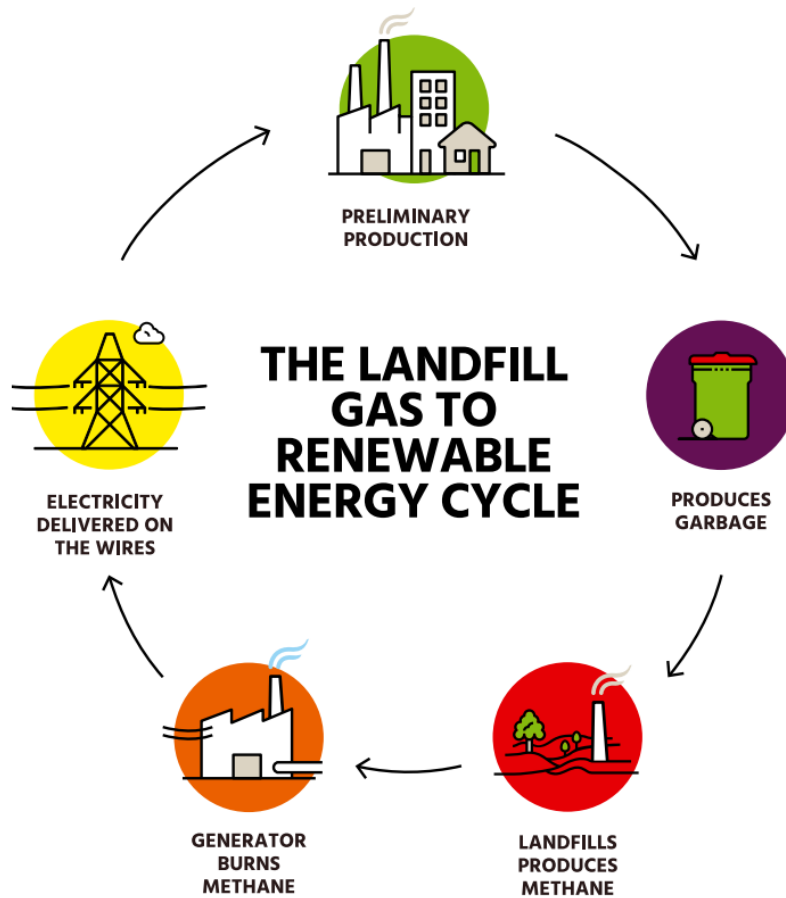
<sup>6</sup> CSE, 2018: *Unfantastic Plastic*

<sup>7</sup> <https://www.foygroup.com.au/wp-content/uploads/IGES-Final-Supplementary-Prospectus-IGE-17.11.17.1-49571209v12.pdf> 23 November 2018

<sup>8</sup> <https://capitalrecyclingsolutions.com.au/greens-put-torch-to-fyshwick-waste-burner-proposal/> accessed 27 November 2018



*Landfill gas fuelled power generation units at the Mugga Lane Resource Management Centre. Source Energy Developments*



## **Engagement, Awareness and Education**

Acknowledging the Conservation Council briefing paper,<sup>9</sup> I support the views expressed there about the need for ongoing attention to community engagement. This is true not only for WtE options, but also to inform the community about what actions they can take to reduce their waste.

I note that ACT NoWaste does not have any social media to speak to the general public. This appears to be a key gap in today's society and this absence ought to be remedied as a matter of priority. The remarkable success of the recent TV program 'War on Waste' illustrates the reach of such modern multimedia campaigns.

Monitoring and transparency are also of critical importance in respect of waste policy. Government must be transparent in its actions and public reporting on waste policy is critical. Monitoring on waste is limited and should be improved and made consistent and meaningful.

**Until the Government can report consistently and demonstrate the effective application of the waste management hierarchy and pursuing a circular economy, it is unreasonable to seek community support for WtE options.**

## **Soft Plastic Waste – the challenge**

Whilst I recognise the real and perceived pollution impacts from options such as incineration, I also recognise that not all waste can be eliminated at source or recycled at end of use. An example of this is soft plastics.

I recently produced the report: *Unfantastic Plastic*, which reviewed the ACT's Plastic Shopping Bag Ban. ([bit.ly/unfantasticplastic](http://bit.ly/unfantasticplastic); [www.envcomm.act.gov.au](http://www.envcomm.act.gov.au))

There is currently no opportunity to upcycle soft plastics, such as shopping bags, and only a limited market to downcycle. I highlight that the current 'compostable' soft plastic is not the panacea for this stream either.

As a society we clearly have a dependence on soft plastics that will remain for the foreseeable future. Whilst we can endeavour to substitute plastic bags with other alternatives, medical and hygienic use of soft plastics, is a bigger challenge.

Plastics endure in our environment for 1000's of years and are known to be ingested by marine and terrestrial animals. The impacts of this persistent litter stream are unfathomable to quantify. There has been serious postulation of plastic as a hazardous waste.

**The quandary is: what is the best solution for a soft plastic waste stream whilst it remains necessary in our lives – bury in landfill forever or burn to produce energy?**

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<sup>9</sup> <https://conservationcouncil.org.au/wp-content/uploads/2017/09/20171209-Reducing-Waste-Canberra-Briefing-Paper-FINAL.pdf>  
accessed 12 November 2018

### **Case study - KWINANA plant with ARENA funding**

Recently the Australian Renewable Energy Agency (ARENA) approved grant funding and the Clean Energy Finance Corporation committed debt financing to construct a waste to energy plant at Kwinana in Western Australia.<sup>10</sup>

Up to 400,000 tonnes of household, commercial and industrial waste — one quarter of Perth's post recycling rubbish — will be diverted from landfill to be thermally treated and converted into steam to produce electricity.

The Kwinana plant will use technology that already has a strong track record in Europe and meets strict environmental requirements. The thermally-treated waste heats water into steam to produce electricity, with metals recovered for recycling and other by-product materials suitable for reuse in the construction industry.<sup>11</sup>

This indicates that there was sufficient evidence to demonstrate that the plant will meet pollution standards and provide a positive outcome. However, it does not reduce the need to continue to drive our consumption at source and reduce our production of waste.

### **Innovation – does adopting waste to energy lock us into the use of old technology prematurely?**

We need to ensure that WtE options do not stifle innovation and do not entrench a linear economy.

### **Supply contracts must facilitate waste and promote reduction as a primary step.**

Business is demonstrating the potential for alternative processes which go some way to achieving a circular economy.

A leading example is Soft Landing, which recycles old mattresses, employing people who may not easily find a job.<sup>12</sup> This model is depicted on the following page.

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<sup>10</sup> <https://thewest.com.au/business/energy/green-light-for-668m-kwinana-waste-to-energy-plant-ng-b88994856z> accessed 8 November 2018

<sup>11</sup> <https://www.cefc.com.au/case-studies/wa-large-scale-energy-from-waste-project-an-australian-first/> accessed 13 November 2018

<sup>12</sup> <https://www.softlanding.com.au/> accessed 8 November 2018

# SOFT LANDINGS

**75% OF USED  
MATTRESS  
COMPONENTS  
ARE CURRENTLY  
RECYCLED**



## **TEXTILE**

R&D INTO WASTE TO ENERGY AND OTHER END-USE PRODUCTS.



## **STEEL SPRINGS**

RECYCLED INTO PRODUCTS SUCH AS ROOF SHEETING.



## **TIMBER & HUSK**

RECYCLED INTO PRODUCTS SUCH AS KINDLING, WEED MATTING, MULCH AND ANIMAL BEDDING.



## **FOAM**

RECYCLED INTO CARPET UNDERLAY.

Various jurisdictions have started to produce the economic and other arguments in support of instituting a circular economy. For instance, South Australia has also undertaken a reasonable amount of work to look at the potential benefits of a circular economy.<sup>13</sup> The work done there suggests that by 2030 a commitment to a circular economy would produce 25,700 full time jobs in design, technology, logistics, reuse and rentals (for example).<sup>14</sup>

My office will be taking a keen interest in this matter over the coming year, particularly in the production of the 2019 State of Environment Report.

Please don't hesitate to contact my office on 6207 2626 if you have any questions.

Kirilly Dickson, Senior Manager Investigations is my contact officer.

Yours sincerely

Professor Kate Auty  
Commissioner for Sustainability  
and the Environment  
29 November 2018

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<sup>13</sup> <https://www.greenindustries.sa.gov.au/circular-economy> accessed 8 November 2018

<sup>14</sup> [https://auspost.com.au/content/dam/auspost\\_corp/media/documents/circular-economy-white-paper.pdf](https://auspost.com.au/content/dam/auspost_corp/media/documents/circular-economy-white-paper.pdf) accessed 28 November 2018