

Submission to the Standing Committee on Industry, Innovation, Science and Resources

Waste management and recycling in Australia

31st January 2020

Terms of Reference:

The House Standing Committee on Industry, Innovation, Science and Resources will inquire into and report on innovative solutions in Australia's waste management and recycling industries, including:

- *Industrial, commercial and domestic waste;*
- *Waste in waterways and oceans;*
- *Landfill reduction; and*
- *Other related matters.*

The Committee is to focus on opportunities presented by waste materials, including energy production, innovative recycling approaches and export opportunities, and to also consider current impediments to innovation.

Terms of Reference

The terms of reference for this inquiry reflects the agenda of the federal government committee tasked with this inquiry – resource exploitation and industrial development. Therefore, from the outset this inquiry is wrong headed and designed to manufacture consent within and outside government for large scale technological fixes such as waste to energy incineration for a problem that is better managed through government regulation and policies for environmental protection, human health protection, resource conservation, ecological sustainability and zero waste principles.

The scale of the global plastic pollution and contamination of the environment, ocean and food chain suggests that a more considered approach is required to resolve Australia's role in this catastrophe than merely investigating the opportunities for technology development.

Waste is as much a social justice problem as it is an environmental threat. Australia's role in waste dumping in the Asia Pacific region demonstrates this, as do the increasing waste stockpile fires occurring throughout Australia following the Government's ban on certain waste exports. Australia must also uphold their commitments to the Basel and Stockholm Conventions.

As such the solutions required must be based on upholding human rights, social and environmental justice and the protection of our shared environment. Waste to energy incineration undermines these.

Waste management in Australia cannot be resolved solely through technology fixes. Corruption and crime in the waste management sector¹, particularly hazardous waste, must be resolved prior to developing and promoting an industry framework.

Recommendation: This inquiry and its terms of reference must be aligned with the federal government's environment, health, climate and sustainability portfolios.

Supporting a Zero Waste City model.

The most cost effective and sustainable waste management model is a Zero Waste City model² that focusses on waste prevention, separate collection and source separation and applies the waste hierarchy to create the right environment for the highest value and increased recycling, composting and reuse of Australia's waste streams.

Without a dedicated and expanded waste management collection system for Australia, down stream solutions such as recycling, composting and reuse projects cannot prosper and will continue to struggle against existing waste management systems that are designed for disposal – an outcome that is unsustainable and not supported by the waste hierarchy.

To prevent and reduce waste and plastic packaging pollution and increase the value of waste resources, the federal government should legislate and implement an expanded Extended Producer Responsibility scheme.

Plastic packaging is a major waste management problem for all sectors including industrial and commercial. The [failure](#) of the Australian Packaging Covenant over decades suggests that an industry self-regulatory model is not sufficient to reduce the excessive waste generated by this industry sector nor manage this waste in an environmentally sound way. It has failed to compel industry to redesign their packaging for reuse, composting or safe bonafide recycling. The federal government needs to legislate for a cap on plastic production, toxics elimination and safer substitution and redesign in the packaging sector.

Mixed waste recycling collection predominantly undertaken by large waste management corporations like SUEZ, Cleanaway and Veolia is undermining better waste outcomes in the reuse and recycling sector. While these corporations are heavily invested in disposal technologies like incineration, there is little incentive to improve or support the recycling sector and other sustainable waste outcomes. All organic wastes must be required to be separately collected for composting and returned to the environment and agricultural

¹ Hazardous Waste in Australia 2019, Blue Environment Pty Ltd, Department of Environment and Energy.

²Challenges and Opportunities in Transforming a City into a 'Zero Waste City', Steffen Lehmann and Atiq Uz Zamen, Curtin University, published in Challenge, 2011.

sector as soil organic carbon and compost as this is the best use of this waste stream and prevents contamination of other waste streams leading to landfill outcomes.

Recommendation: The Federal Government needs to legislate for Zero Waste City models in all states to uphold the waste hierarchy and support the recycling, reuse and composting sectors. This should include mandatory separate collection for all organic waste, paper, glass, recyclable plastic and residuals.

Recommendation: Expand Australia's Extended Producer Responsibility scheme to include packaging, with mandatory targets for a cap on plastic production, toxics elimination and substitution and redesign.

False technology solutions

The Asia Pacific region including Australia is facing an unprecedented push to establish the waste to energy incineration industry in the region. This industry sector which is vertically and horizontally aligned with the fossil fuel industry, is in fact in decline in the US and EU as government subsidies and support is [removed](#) in recognition that incineration does not provide renewable energy and is a major threat to a sustainable circular economy and a safe climate future.

Comparatively, waste to energy incinerators emit more toxic air pollutants and ghg's per unit of energy than coal, oil and gas.³

Mass Combustion, Gasification and Pyrolysis technologies pose environmental and public health impacts in surrounding communities and globally through the dispersion of persistent organic pollutants and ghg's, while also creating ash that will require secure landfill.⁴

Waste incinerators produce large amounts of toxic air pollution that impact on the environment and human health. These emissions include highly toxic and carcinogenic persistent organic pollutants such as dioxins and furans (PCDD and PCDF), hexachlorobenzene (HCB), PCBs and brominated persistent organic pollutants.⁵

Incinerators also emit nanoparticles, toxic heavy metals such as lead, mercury and arsenic and acid gases that have serious impacts on human health⁶. Many of these

³ U.S. EPA eGRID 2012 Database. Analysis by Energy Justice Network. www.EnergyJustice.net and USEPA (2005) The Inventory of Sources and Environmental Releases of Dioxin-Like compounds in the United States: The Year 2000 Update. March 2005 External Review Draft.

⁴ Bell, L and Bremmer, J, 2013, Burning waste for energy: it doesn't stack up. The National Toxics Network, Australia.

⁵ USEPA (2005) The Inventory of Sources and Environmental Releases of Dioxin-Like compounds in the United States: The Year 2000 Update. March 2005 External Review Draft.

⁶ British Society for Ecological Medicine (2008) *The Health Effects of Waste Incinerators*. 4th Report of the

pollutants are carried on the wind impacting communities and ecosystems long distances from the point of origin⁷.

Australia is a signatory to the Stockholm Convention, which obliges us to reduce, and where feasible, eliminate sources of dioxins and furans. Permitting incinerators to establish in Australia contravenes the intent of this obligation. In addition, many chemicals of concern from emissions are not monitored or regulated in Australia even though they are unavoidably released from incinerators.

The Australia Public Health Association's - *The health impacts of waste incineration: a systematic review of this industry*⁸, confirms:

Results: *A range of adverse health effects were identified, including significant associations with some neoplasia, congenital anomalies, infant deaths and miscarriage, but not for other diseases. Ingestion was the dominant exposure pathway for the public. Newer incinerator technologies may reduce exposure.*

Evidence from the Netherlands confirms that even the newest incinerator technologies cause significant pollution and health impacts to the surrounding communities and their environment.⁹

Recommendation: The Australian Government should place a national moratorium on all waste to energy incineration projects, including Refuse Derived Fuel and Process Engineered Fuel projects for the protection of our climate and public health and to allow for sustainable zero waste city models to establish.

Recommendation: The Australian Government should remove all renewable energy, clean energy and other subsidies for the waste incineration industry.

Residual waste management

The only fraction of our Municipal, Commercial and Industrial, Construction and Demolition waste streams that require disposal is the residual fraction that is left after all organics and recyclable materials are removed. This waste is predominantly non-recyclable single use plastic, contaminated paper, cardboard and sanitary wastes.

There are safer technologies to manage this waste than burning it for energy and perpetuating a linear system of materials production, consumption and disposal.

British Society for Ecological Medicine.

⁷ For example, see Stockholm Convention on Persistent Organic Pollutants 2001, www.pops.int

⁸ Australia and New Zealand Journal of Public Health, The health impacts of waste incineration: a systemic review, 2019.

⁹ Arkenbout, Abel, 2018/11/01, Hidden emissions: A story from the Netherlands Case Study.

New emerging hydrogen technologies, Gas Phase Chemical Reduction (GPCR), Anaerobic Digestion technologies and Mechanical Recovery Biological Treatment (MRBT) technologies¹⁰ can manage residual waste (including with energy production) without the accompanying air and ash pollution and without the huge costs and financial risks associated with waste to energy incineration.

Waste incineration technologies are the most expensive and high risk¹¹, residual waste management options. Existing waste to energy incinerator facilities in [Europe](#) and the US have a long history of fires and explosion.

Recommendation: The Australian government should establish a Zero Waste City Model taskforce, including a residual waste research laboratory to work towards eliminating residual waste and implementing zero waste policies.

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¹⁰ Favioni, Bailey, Morris, Lombardi, What is the best disposal options for the leftovers on the way to zero waste, Ecocycle, 2013.

¹¹ Global Anti Incineration Alliance, Burning Public Money for Dirty Energy. Misdirected Subsidies for “Waste to-Energy” Incinerators April 2011