**Submission No 87**

# INQUIRY INTO PROPOSED ENERGY FROM WASTE FACILITIES

**Organisation:** No More Incinerators Inc

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# NO MORE INCINERATORS INC

The Hon. Nichole Overall, MLC
Chair
Select Committee on Proposed Energy from Waste Facilities
Parliament House
Macquarie Street
SYDNEY NSW 2000
Contact: wasteenergy@parliament.nsw.gov.au

01 October 2025

Dear Ms Overall

**RE: ENQUIRY INTO PROPOSED ENERGY FROM WASTE FACILITIES**

The incineration or thermal treatment of solid waste is harmful to human health, the environment and contaminates our food chain no matter what incineration technology is used.

Given this, No More Incinerators Inc OBJECTS to the burning or thermal treatment of waste at any location in NSW for the following reasons:

1) The justification for the approval of the technologies proposed for the Tarago and Parkes waste incinerators is based on the updated NSW Chief Scientist and Engineer's report which maintains that "modern" waste incinerators are safe and widely used in Europe. This report is flawed because:
    a. It only reviews options FOR the incineration of waste and does not provide a balanced review of the alternatives. Nor does it mention the health and environmental issues associated with waste incinerators being found in the UK and the EU and
    b. The independent reviewers have a potential conflict of interest.
2) The spread of aerial emissions and exposure to ash and other residues created by waste incinerators will have harmful, long-term impacts on human health, the environment and contaminate the food chain.
3) The position maintained by the NSW EPA and Government that the burning, pyrolysis or gasification of residual waste is part of a Circular Economy is false.
4) The creation of a true Circular Economy is a viable alternative that will greatly reduce the amount of solid waste being sent to landfill and remove the need for ANY waste incineration.
5) The immediate adoption of biopolymers to replace fossil-fuel based plastics, will remove the need to incinerate the large quantities of soft plastic packaging currently generated.

## 1) The performance of so-called best available waste incinerator technologies

The justification for adopting the incineration of waste as the only viable solution to the Greater Sydney waste crisis is a review carried out by staff from the University of Sydney.[1] This report cannot be relied on for the following reasons:

*a) Possible Conflicts of Interest*

The Waste Transformation Research Hub at The University of Sydney is partnered and have received funding from a range of fossil fuel and waste management companies including Toxfree (wholly owned by Cleanaway – a major operator of waste incinerators around the world and Delta Electricity (operator of NSW coal-powered electricity generators).

This calls into question whether this review is independent of any influence from power generation, energy from waste or waste management companies who have a vested interest in promoting the incineration of waste rather than creating a true Circular Economy to recover and reuse materials from the current waste stream.

The report's authors are chemical engineers in the School of Chemical and Biomolecular Engineering. Their expertise is in "Process Systems Engineering", often focused on improving incineration processes, including coal powered electricity.[2] They do not appear to have any expertise in health or the disposal of hazardous waste.

*b) Failure to Evaluate all Viable Options*

The review is incomplete because it has failed to evaluate a number of alternative opportunities for the management of NSW's waste. Instead, it has considered only one option to reduce the amount of material going to landfill – the mass incineration of dry waste. A complete, independent and unbiased review would have evaluated a thorough cost-benefit analysis of the existing and various other options for the disposal of Sydney's waste.

As a start, such a review would need to cover the following options as minimum:

i. Continue disposal of waste to landfill

For this option the study would need to consider two cases

- Business As Usual - do nothing and continue to landfill all waste as is or
- Continue to landfill, but with all food and green organics removed from the waste stream and composted. This would achieve a minimum 40% reduction in the quantity of material going to landfill and extend the life of the existing landfills.

The estimated costs for each case would need to be based on the availability of potential landfill sites and how long these could be expected to last, and projected transport costs.

ii. Mass incineration, gasification or pyrolysis of waste currently disposed of to landfill

Currently Veolia proposes to build a 400,000 tpa capacity waste incinerator at Tarago on Sydney's southern outskirts and Parkes Clean Energy Recovery is proposing to build a 600,000 tpa capacity waste incinerator in the Parkes Special Activation Precinct.

These incinerators are being promoted as a cost-effective means of managing NSW's waste and if these incinerators are permitted other similar proposals will be made.[3]

This approach is flawed because the on-costs associated with the incineration of waste are huge and any proposal to justify the incineration of waste should consider the following as a minimum:

- Cost of Ongoing Emissions Monitoring

  The cost and ongoing management of independent, **continuous** monitoring of incinerator stack emissions for heavy metals and POPs (persistent organic pollutants). For example, heavy metals, dioxins – including brominated dioxins and furans can be monitored using an AMESA[4] type or similar continuous sampler.

  AMESA samplers (Adsorption MEthod for SAmpling) of pollutants such as dioxins and furans reflect current best practice for the continuous, long-term sampling of stack emissions and would be carried out in addition to the current continuous monitoring of acid and other gases normally undertaken. ENVEA's AMESA sampler has been TÜV and MCERTs certified, ETV EPA approved and meets EU Standards EN 1948-1 and CEN/TS 1948-5.

  Several other EU-based companies also offer similarly certified samplers. For example, Gasmet's automated dioxin sampling system also meets the European EN 1948-1:2006 standard.[5]

- Costs of Disposal and Ongoing Monitoring of Solid Wastes

  The cost and ongoing management of the various forms of hazardous waste generated by incineration, gasification or pyrolysis.

  This ash cannot be treated and has been shown to leach pollutants into the environment even when mixed with concrete. This is because persistent organic pollutants (POPs), similar to most other heavy chlorinated pollutants, cannot be stabilised or immobilised by mixing with cement. Studies in the UK have found that cement mixed with incinerator ash used to construct municipal footpaths have leached POPs into the surrounding soil[6].

The cost of landfilling each batch of spent reagents (e.g. activated carbon) as well as the large quantities of residual and highly toxic fly ash generated during incineration must also be included. Additional costs associated with the long-term environmental monitoring of each landfill must also be included.

Each batch of material would need to be assessed, for example by using the US EPA's Toxicity Characteristic Leaching Procedure, (TCLP test).[7]

The TCLP test is the NSW EPA's preferred methodology for the classification of waste prior to disposal to landfill and would most probably mean that all of this material would classified as Hazardous Waste, which cannot be disposed of to a "normal" landfill, but must be disposed of in specially constructed clay containment cells.

- Loss of Government Subsidies

  The withdrawal of Government subsidies currently being used to justify some proposals along with the ongoing costs outlined above mean the long-term viability of the industry is doubtful cannot be guaranteed as demonstrated by the waste incinerators still under construction or operating at a loss in WA.

**2) Health and environmental impacts from currently operating older technology waste incinerators**

While most of the older technology waste incinerators are no longer in operation, it should be noted that the basic incineration technology has not changed and any improvements in process control or filtration technology have not prevented the discharge of acid gases, heavy metals and persistent organic pollutants (POPs). This means that while the quantities of the pollutants have been reduced, their long-term impacts on human health, the environment and build up in our food chain are still significant and a large number of studies conducted in the EU where incinerators using the latest technology have been operating show this, e.g.[8, 9]

**3) Spread of emissions and long-term environmental and human health impacts from exposure to ultrafine and nano-particulates**

The NSW EPA's Energy from Waste Policy Statement[10] still allows for up to 20 mg/m$^3$/hr total particulates to be discharged to the atmosphere. This will be disastrous for NSW residents as any communities downwind of an average incinerator discharging 50m$^3$/sec from the stack could be subjected to up to 3.6 kg/hour[11] of ultrafine and nano-particulates

and a wide range of toxic acid gases, heavy metals and persistent organic pollutants that are adsorbed onto the surface of these particulates 24/7, 365 days/year.

**NOTE:**

Waste management companies here claim that NSW regulations are equivalent to EU regulations, however this is false. For example, current EU regulations only permit 5mg/$m^3$/hr of particulates to be discharged from the stack whereas the NSW EPA limit is 20mg/$m^3$/hr – four times higher.

It's also important to note that the ultrafine and nano-particulates discharged by waste incinerators cannot be filtered out, even by the best available technology filtration systems. These particulates also carry a range of heavy metals and persistent organic pollutants (POPs) that will be discharged into the environment affecting the long-term health of surrounding residents and be absorbed into the food chain. The damaging health effects of these pollutants are well known where waste to energy incinerators have been operating in the UK and Europe for many years.[12]

Of particular concern are the discharges that occur during start up, shut down or during unstable running, otherwise known as OTNOC or Other Than Normal Operating Conditions. During these events very large concentrations of pollutants can be emitted.[13] [14]

These emissions will spread wherever the wind blows and current research indicates that increased levels of pollutants begin to be detected around two to three years after an incinerator begins operation.

**NOTE:**

Given the nature of the ultrafine and nano-particulates that will be discharged, the extent of the contamination will NOT be governed by the spread of just the PM5 and PM10 particulates but will travel much further and that mapping NOx concentrations based on average yearly wind data would provide a more accurate prediction of long-term pollutant concentrations.

Waste incinerators also produce large quantities of greenhouse gases (GHG) affecting our commitments to reduce GHGs. Estimates vary but burning 2 Mtpa of dry waste will create around 3.4 Mtpa of greenhouse gases[15].

## 4) Alternative solutions to reduce and manage Greater Sydney's waste - benefits of creating a true Circular Economy

Burning, pyrolysis or gasification of processed waste is NOT, and will never be part of a Circular Economy. This is because once burnt or "thermally treated" the resource is gone forever and can never be recovered or reused. Burning, pyrolysis or gasification of processed waste is a prime example of a linear, single use economy – not a circular one.

The waste incineration industry effectively kills off any incentive to create a viable, long-term recycling industry. Once established the waste incineration commandeers all the available product streams that could be recycled which drives any ongoing recycling initiatives out of the market as they are unable to source raw materials and become uneconomic.

An independent study is required to determine the costs and benefits of moving from NSW's current make, use dispose economy to a Circular Economy and include the number of skilled, permanent positions that would be created. These jobs would not be limited to the construction phase, but also the manufacturing of the equipment required to process materials recovered from the waste stream and the remanufacturing of new materials and goods – all of which could be done within NSW. The ongoing maintenance and servicing of the needs of the industry would continue to provide a range of further employment opportunities.

The same companies currently proposing to burn all of the waste from Sydney and the ACT could "pivot" and provide alternative proposals to refine the current waste stream and create resources for reuse by newly created downstream industries.

As a guide, the recent PricewaterhouseCoopers (PwC) study, "Building a More Circular Australia"[16] estimates that the cumulative economic benefit to NSW of moving to a circular economy through to 2040 would be $648 billion.[17]

This approach would greatly reduce the quantity of landfill capacity required, but unfortunately successive governments have not shown the leadership required to put into place permanent, sustainable solutions that will benefit the environment, society and the health of all.

## 4. Replacement of fossil fuel-based plastics with biopolymers

These biopolymers will break down to form compost, even if landfilled, as they meet the requirements of AS 4736-2006: Biodegradable plastics - Biodegradable plastics suitable for composting and other microbial treatment and AS 5810-2010: Biodegradable plastics suitable for home composting.

Any packaging meeting AS 4736: Australian Commercial Composting Standard or AS5810: Australian Home Composting Standard are fully compostable and will break down in landfill to 100% organic material that does not form microplastics or leach harmful pollutants.

There are many companies now manufacturing an extensive range of compostable products that are widely available and can replace all the soft plastics currently in use – including for food packaging e.g. https://biobagworld.com.au/. This would have an enormous effect on how out of date and other food items are disposed of throughout the food industry –

including take away food packaging. These products are the future – not producing and having to dispose of increasing quantities of soft plastic packaging.

## 5. Waste management regulations framework review – a retrograde step

The NSW EPA and Government should pause any attempt to revise these regulations and hold a public enquiry to review all of the options available for managing NSW's waste.

No More Incinerators Inc objects to any changes to the regulations, such as:

**Clause 144(4) of the PoEO (General) 2022 Regulations**

Revision of this regulation to allow exceptions for powering onsite industrial or manufacturing processes will enable the NSW EPA to consider and allow proposals to replace cleaner fuels such as LPG and natural gas with other, less environmentally friendly ones such as refuse derived fuels and other fuels obtained from various municipal waste streams.

If this revision is adopted, any company wishing to save on their fuel costs will be able to apply to build a waste incinerator to power their process instead. This will impact the health of surrounding communities, degrade our environment and contaminate our food chain.

At a time when we are trying to repair our environment and reduce GHG emissions this proposed change is irresponsible and unacceptable.

**Clause 124 of the PoEO (General) 2022 Regulations**

This clause allows the remanufacturing of products containing recycled plastic and the conversion of plastic waste into petroleum-based fuels such as jet fuel.

**Conversion of waste plastics to fossil fuels**

Allowing the conversion of plastic waste to petroleum-based fuels, e.g. aviation fuel is not part of a Circular Economy, is not sustainable and does not provide a "clear environmental benefit." This is because it inhibits the adoption of greener fuels such as hydrogen and promotes the ongoing manufacture of oil-based plastics to feed the industry.

**Proposed and existing designated precincts**

No More Incinerators Inc objects to any new waste to energy precincts being created and to the designation of the Goulburn Mulwaree and Parkes Special Activation precincts to allow the incineration of waste as this is a direct threat to the health of local communities and the Greater Sydney area, the environment and local food producers who will lose their organic food producers certification should a waste incinerator be constructed.

Extending the West Lithgow Precinct boundary to include the former Wallerawang power station to burn waste will reintroduce toxic pollutants into the area that will adversely impact the health of local communities and the Greater Sydney area, the environment and

local food producers. Any current or future proposals to promote the Wallerawang Lakes area as a tourist and trout fishing destination will no longer be viable

Creating a new waste to energy precinct for Tomago would create similar issues to the Goulburn Mulwaree area with the health of local communities and the local wine and farming industries being adversely impacted.

**Conclusions**

No More Incinerators Inc maintains that The NSW Government's proposal to reduce the amount of material being sent to landfill via incineration will not solve the waste management crisis in NSW as promoting incineration will kill off any initiatives to reduce the amount of waste created in the first place and create an exponential requirement for the ongoing incineration of waste.

As such, it requests:

1) An independent review into the use of incineration to reduce landfill be carried out to address the issues raised above
2) The NSW EPA and Government pause any attempt to revise the current regulations and hold a public enquiry to review all the options currently available for the management of NSW's waste streams.
3) The immediate adoption of biopolymers to replace fossil-fuel based plastics will remove the need to incinerate the large quantities of soft plastic packaging currently generated.
4) The revision of the Chief Scientist and Engineer's final report and the independent review carried out by the University of Sydney to review all available options for managing NSW's various waste streams.

The writer would be happy to discuss further with the committee any of the issues raised above if required.

Yours faithfully

Chris Hanson
No More Incinerators Inc
Eastern Suburbs

**REFERENCES:**

[1] University of Sydney - Independent review and expert advice (Appendix 4, Energy from Waste Report, NSW Chief Scientist & Engineer, May 2020

[2] https://www.sydney.edu.au/engineering/about/our-people/academic-staff/ali-abbas.html

[3] Total capacity of waste to energy proposals submitted and proposed to the NSW Department of Planning, Industry and Environment – NSW Planning Portal (as at 2022)

[4] Envea Dioxins & Furans Permanent Sampler - Amesa-D

[5] Gasmet Automatic Dioxin Sampling System – GT90 Dioxin+

[6] IPEN, Toxic Ash Poisons Our Food Chain, 2017, Section 9, Case Studies, Newcastle, UK (Byker Waste Incinerator)

[7] US EPA TCLP testing procedure

[8] Waste Incineration and the Environment (Jelinek, et al, P148, Sect 6, Impact of Incinerators on Human Health)

[9] Pollution from Waste Incineration – A Synopsis of Expert Presentations on Health and Air Quality Impacts

[10] NSW Energy from Waste Policy Statement

[11] A discharge rate of 50$m^3$/sec = 180,000$m^3$/hr and 180,000$m^3$/hr x 0.02g/$m^3$ =3,600g/hr or 3.6kg/hr

[12] Bremmer J, Zero Waste OZ, Public health impacts associated with incinerators – a compilation of studies.

[13] JRC Reference Report on Monitoring of Emissions to Air and Water from IED Installations, 2018, Part 3.5

[14] Hidden emissions of UPOPs: Case study of a waste incinerator in the Netherlands, Toxico Watch, 2019

[15] Veolia Winnipeg STP Process Selection Report, Appendix 7 – CO2 Emissions Factors Database

[16] PricewaterhouseCoopers, "Building a More Circular Australia"

[17] PricewaterhouseCoopers, "Building a More Circular Australia" (Table, P12; Cumulative benefits to 2040)