Submission No 241

INQUIRY INTO PROPOSED ENERGY FROM WASTE FACILITIES

Organisation: Residents Against the Richmond Valley Incinerator Inc

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Residents Against Richmond Valley Incinerator Inc

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The Committee Secretariat
Select Committee on Proposed Energy from Waste Facilities
New South Wales Legislative Council
By form at:
www.parliament.nsw.gov.au/committees/inquiries/Pages/lodge-a-submission.aspx?pk=3128

31 October 2025

Submission on Proposed Energy from Waste Facilities

Residents Against the Richmond Valley Incinerator Inc. (RARVI) is a community organisation based in the Northern Rivers region of New South Wales. RARVI was formed when the Richmond Valley Regional Jobs Precinct (RVRJP) in Casino was identified by the NSW State Government as one of only four named exceptions under clause 144 of the *Protection of the Environment Operations (General) Regulation 2022*, as a location where the thermal 'treatment' (i.e. incineration) of residual municipal waste may occur to generate electricity.

In February 2025, the NSW Environment Protection Authority (EPA) sought feedback on proposed changes to the NSW energy from waste framework, releasing an *Energy from Waste Options Paper*. Feedback on the Options Paper was closely followed by consultation on Chapter 1 of the *NSW Draft Waste and Circular Infrastructure Plan*. This past week, the outcomes of these consultation efforts by the EPA were published.

The *Energy from Waste Options Paper* identifies that Casino's RVRJP will no longer be identified as a priority infrastructure area for the thermal treatment of waste. It states that the map (published in the NSW Government gazette on 8 July 2022, which identified the RVRJP as a nominated precinct) would be revoked. Curiously, it does not commit to amending the POEO (General) Regulation to remove the RVRJP from its list of nominated sites.

While RARVI was formed to oppose the former NSW Government's decision to allow for Energy from Waste (EfW) development on the edge of Casino, our members are lobbying against this form of waste 'treatment' anywhere in New South Wales or indeed Australia.

We appreciate the opportunity to provide input to the Inquiry into proposed EfW facilities. This submission will mostly be informed by our research into EfW, the studies that expose the hazards, the many alternative waste treatments available and the opportunity that currently exists to adopt zero waste strategies.

In summary, RARVI is not convinced that the technology of state-of-the-art facilities is sufficient to prevent harm to surrounding communities through air pollution, disposal of the toxic fly ash and air filter residues, and increased greenhouse gas emissions.

On the following pages, we provide the comments in relation to each of the Inquiry's terms of reference.

1. **The performance of the technologies proposed for the Tarago and Parkes Energy Recovery Facilities as compared to leading thermal technologies employed in "state of the art" facilities internationally, noting such technologies as proposed are not employed anywhere else on the Eastern seaboard.**

   (a) Despite what the incinerator industry has said about modern designs having much more efficient air filtration, according to Tait and Brew et al. (2019)[1]:

   > *Based on a precautionary principle there is insufficient evidence to conclude that any incinerator is safe. There is some suggestion that newer incinerator technologies with robust maintenance schedules may be less harmful, but diseases from exposure tend to manifest only after many years of cumulative exposure, so it is premature to conclude that these newer technologies improve safety.*

   (b) The waste industry claims that incineration reduces carbon emissions compared to landfill. A 2022 study by Eunomia Consultancy titled *Greenhouse Gas and Air Quality Impacts of Incineration and Landfill* found that landfill that has undergone Mechanical Biological Treatment (MBT) is currently the safest, most efficient means of waste disposal. Their conclusion included:

   > *Incineration cannot be considered a 'green' or low carbon source of electricity, as the emissions per kWh of energy produced are higher than CCGT [Combined Cycle Gas Turbine], renewables and the likely aggregated future marginal source of electricity in Australia. The carbon intensity deficit of residual waste incinerators will increase as the electricity grid decarbonises.*
   >
   > *The use of incineration is therefore also incompatible with the achievement of local net zero climate change targets in respect of emissions from energy generation, unless coupled with carbon capture and storage. This technology is not yet commercially viable, and its use will considerably increase the cost of treatment.*

   (c) One of the principles for EfW in NSW is that these facilities should adhere to the precautionary principle near areas of high population and in areas where there are regular exceedances of air quality from existing sources. Hence, these facilities are currently banned from the Greater Sydney area in NSW. This principle is an admission that pollution will occur and recognises the inherent risk of EfW pollution leading to health impacts in the community.

   (d) Therefore, in RARVI's opinion, EfW should not be viewed as an option anywhere. Even the most efficient filter systems do not remove 100% of toxicity, as evidenced by numerous instances in Europe, France being just one. Twelve million people in France have been prohibited from eating their backyard produce as a result of dioxin contamination caused by their best practice EU standard incinerator.[2]

[1] Peter W. Tait, James Brew, Angelina Che, Adam Costanzo, Andrew Danyluk, Meg Davis, Ahmed Khalaf, Kathryn McMahon, Alastair Watson, Kirsten Rowcliff, Devin Bowles (2019) 'The health impacts of waste incineration: a systematic review', *Australian and New Zealand Journal of Public Health*, Vol.44(1): pp.40-48. https://doi.org/10.1111/1753-6405.12939

[2] See www.euronews.com/green/2023/11/21/millions-in-france-warned-not-to-eat-eggs-from-backyard-chickens-due-to-forever-chemical-p

(e) A separate 2025 study by Tait and Salmona et al.[3] included the following statement in their conclusion:

> *there are substantial concerns regarding toxic chemicals in flue gas, heavy metals in bottom ash and air quality around plants.*

(f) The NSW Chief Scientist and Engineer claimed it was appropriate for EfW incinerators to be developed in regional areas of NSW if the EPA requires NSW incineration standards to meet international best practice. How can this conclusion be taken seriously, when no standards exist for PFAS, microplastics or brominated dioxins, all of which are known to be emitted from EfW incinerators?

2. The spread of emissions predicted and the quality of emissions to be generated.

(a) Community Against the Tarago Incinerator (CATTI) has developed a plume plotting map using data about the proposed Veolia incinerator and its emissions taken from information provided by the incinerator promoters. It takes account of the real terrain in the vicinity of the incinerator, current weather conditions, upper air data, as well as properties of the incinerator emissions and the shape of the incinerator buildings.

(b) EfW incineration creates tonnes of toxic fly ash and air filter residues that are treated as hazardous waste and so require immobilisation and landfilling, putting to bed claims that incineration significantly reduces the need for landfill.[4]

(c) According to industry, one tonne of ash is produced for every four tonnes of waste burnt. Industry asserts that bottom ash can potentially be recycled for use in the construction industry as fill material, road base, concrete or brick making. However bottom ash, as well as fly ash, contains PFAS and other pollutants which are not rendered inert by these techniques of disposal. 'Recycling' incinerator ash by application to agricultural land or its inclusion in road base or other building/construction materials is a fast-track to poisoning the local environment and spreading pollution more widely.[5]

3. Heath impacts from currently operating older technology waste incinerators as compared to the proposed newer technology.

(a) In their review, Tait and Brew et al. (2019) identified that there is an impact of incinerator age in one of the papers included in their review. This found significantly higher dioxin concentrations in breast milk of mothers exposed to the older, compared to the modern, incinerator.

(b) We are not convinced, however, that new technology substantially resolves all the pollution issues associated with older incinerators. Yes, improvements have

[3] Peter W. Tait, Joe Salmona, Mahakaran Sandhu, Thomas Guscott, Jonathon King, Victoria Williamson (2025) 'Economic, Environmental, and Sociopolitical Aspects of Waste Incineration: A Scoping Review' *Sustainability*, Vol. 17: 5528. https://doi.org/10.3390/su17125528

[4] Energy Justice Network (no date) 'Landfills are bad, but incinerators (with ash landfilling) are worse' www.energyjustice.net/files/incineration/incineration_vs_landfills.pdf

[5] Zhan Yang, Fan Lü, Hua Zhang, Wei Wang, Liming Shao, Jianfeng Ye, Pinjing He (2021) 'Is incineration the terminator of plastics and microplastics?' *Journal of Hazardous Materials*, Vol.401, 123429 https://doi.org/10.1016/j.jhazmat.2020.123429

been made but they were needed. These improvements have not yet resolved the fundamental problem that incineration releases toxins, and concentrates the toxins that are present in residual municipal waste. Please refer back to our point 2(b) and point 1(c) and the 'precautionary principle' asserted by Tait and Brew et al. (2019).

(c) The UN Special Rapporteur on Toxics and Human Health, Dr Marcos Orellana, states[6]:

> *Waste incinerators … emit numerous toxic chemicals into the atmosphere, toxic ashes and other residues. The chemicals present in stack gases, in ashes and in other residues include dioxins, polychlorinated biphenyls, polychlorinated napthalenes, chlorinated benzenes, polyaromatic hydrocarbons, numerous volatile organic compounds, and heavy metals including lead, cadmium and mercury. Many of these are persistent (do not easily degrade in the environment), bioaccumulative (build up in the tissues of living organisms) and toxic. Studies show that the adverse health outcomes in occupational workers and populations near waste incinerators include lung, liver, gastric and childhood cancers, as well as reproductive dysfunction.*

Further, Dr Orellana states:

> *even the most modern incinerators impose heavy environmental and health costs.*

RARVI was disappointed that these concerns, which were published last year and so are more recent than the NSW Chief Scientist and Engineer's report (and the Victorian EPA's literature review), were not acknowledged in the EPA's 2025 *Energy from Waste Options Paper,* nor acknowledged by the NSW Government.

4. Impacts on human health including on regional town drinking water, rainwater harvesting and soil contamination.

(a) Several studies in Tait and Brew et al.'s 2019 review showed that local residents may be exposed to carcinogenic levels of pollutants from waste incinerator emissions. Cancers found to be associated with waste incinerator exposure include non-Hodgkin lymphoma, soft tissue sarcoma, and bowel, stomach, gallbladder, lung and pleural cancers.

(b) Children, pregnant women and nursing mothers are at greatest risk from pollution exposures associated with waste incinerators. Studies examining the effects of waste incinerator exposure on reproductive outcomes have found significant adverse effects, including preterm delivery, reduced sperm quantity and quality, congenital anomalies, infant deaths, and miscarriage.[7]

5. The impact on agriculture locally and across the wider region.

(a) Food producing industries are directly impacted by persistent pollutants such as dioxins, furans and mercury which build up in the food chain and concentrate in livestock, eggs and milk. This has implications for human and environmental health.

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[6] Page 14 in Human Rights Council (2024) *Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes on his visit to Australia*. https://docs.un.org/en/A/HRC/57/52/Add.2

[7] https://onlinelibrary.wiley.com/doi/full/10.1111/1753-6405.12939

(b) Tait and Brew et al.'s 2019 review shows contamination of food and ingestion of pollutants is a significant risk pathway for both nearby and distant residents. Both local residents ingesting food grown near incinerators, as well as more distant populations consuming food transported from areas near an incinerator, are open to exposure. Hence, they strongly recommend new incinerators should be located away from areas of food production, and that food grown near an incinerator should be avoided. Thus, incinerators will have a significant adverse impact on local agriculture.

(c) RARVI identified a significant anomaly in the logic of the RVRJP's Masterplan when it was exhibited in early 2024. The Masterplan aimed to piggyback on the region's strong and vibrant agricultural industries. It recognised, in its 'snapshot of agriculture megatrends impacting Australia', the importance of the perception of product sources being 'clean and green'. An EfW incinerator in the vicinity of any of the growing and processing areas of agricultural products would threaten the market potential of agricultural businesses. That was a major argument against the EfW facility in Casino's RVRJP. It should be a major argument anywhere else in regional NSW – the focus of those areas should remain agriculture, not burning Sydney's waste.

6. Impacts of waste dumping over a number of decades in the Tarago region.

(a) CATTI has documented the many instances of Veolia breaching its licence conditions at their so-called 'Woodlawn Eco Precinct' near Tarago. These include exposing workers and the community to asbestos, and blocking community information requests to the EPA for operational infringements. The company has been fined for 'the unbearable smell' and there were 500 complaints against their practices in one year alone. Not a track record for Veolia to be proud of and not a reason to trust assurances of best practice in any incineration facility run by Veolia at this site.

7. The methodology of emission monitoring employed by leading large scale waste-to-energy facilities in Australia and across the world.

(a) It is RARVI's understanding that existing facilities across Europe and the USA are not continually monitored. Emissions are measured intermittently and always with prior notification to the facility. In addition, conditions provide for 'Other Than Normal Operating Conditions (OTNOC)' events, such as during maintenance, which are exempt from emissions measurement in spite of those events being the source of a gross escalation of toxic venting.

8. Alternative solutions to reduce and manage residual waste produced by Greater Sydney.

(a) As incinerators are being dismantled in Europe, many cities are adopting zero waste strategies, the most basic of which is source separation to enable specific treatments of different waste streams.[8]

[8] Page 15 of Paul Connett (2013) *The Zero Waste Solution: Untrashing the planet one community at a time,* Chelsea Green Publishing.

Munich and Barcelona are two of the largest cities to embrace and work towards the concept of zero waste. Although every city has different needs, the NSW Government has many examples to draw from in order to form its own zero waste strategies for Greater Sydney.

(b) By sleight of hand and with encouragement from industry, the NSW Government has included EfW as a component of a circular economy. EfW incineration is not compatible with aims to develop a circular economy. Dr Marcos Orellana, the United Nations Special Rapporteur on Toxics and Human Rights, who was invited to Australia by the Federal Government in 2023, noted in his End of Mission Statement (EoMS) that the term 'circular economy' had been co-opted and abused:

> *The Special Rapporteur also notes that waste incineration is the end of the line for fossil fuels. It reflects a linear process that is incompatible with a chemically safe circular economy.* [9]

RARVI concurs with the Dr Orellana's view.

Would we not be better served by strategies to reduce waste at the source of manufacture and fund research into alternatives that are reusable or compostable?

(c) One of the most effective means of reducing residual waste is to limit plastics made from fossil fuels. RARVI recommends legislating extended producer responsibility and encouraging research into alternatives to replace plastic in many applications, such as packaging, with, for instance, tax incentives and grant opportunities. Non-recyclable or reusable plastic is an industrial design flaw that could be rectified.

There are many initiatives to draw from, such as:

- Biodegradable plastic made from cactus juice[10]
- Seaweed[11] and
- Hemp[12].

If plastic production from fossil fuel sources were reduced then so would be the need to extract fossil fuels, which could make a major contribution to emissions reduction and achieving net zero.

(d) Expansion of the already extremely successful container refund schemes is another method of reducing municipal waste volumes and encouraging separation of waste streams.

(e) Initiatives to reducing waste through re-use and repair should be encouraged. Bayside City Council in Victoria has a roving repair program. Through pop-up events, each focusing on a particular theme, members of the community are encouraged and empowered to repair 'textiles and clothes, electronics and appliances, toys and small furniture, bicycles, and more'[13].

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[9] Human Rights Council (2024) p.14. https://docs.un.org/en/A/HRC/57/52/Add.2

[10] Reported in www.forbes.com/sites/scottsnowden/2019/07/14/scientist-in-mexico-creates-biodegradable-plastic-from-prickly-pear-cactus/ and https://materialdistrict.com/article/bioplastic-cactus-juice/

[11] See www.csiro.au/en/news/all/articles/2022/march/could-seaweed-replace-plastic

[12] See https://hempplastic.com/

[13] See www.bayside.vic.gov.au/services/waste-and-recycling/roving-repair

(f) Recycling tyres in shredded form can be used for sports surfaces or asphalt modification.[14]

(g) Food waste makes up a quarter of all NSW business waste going to landfill, and it is the single biggest waste stream across almost every sector. However, while coastal communities in regional NSW adopted kerbside food organics and garden organics collections to divert that waste from landfill years ago, most of Sydney is yet to do so. This delay is one of the reasons Sydney is facing its so-called 'landfill crisis'. Finally, after years of dithering, legislation has been introduced to mandate FOGO in Sydney but, while businesses and institutions must adopt it starting next year, it won't be rolled out to households until 2030. When finally implemented, this may result in the diversion of almost 950,000 tonnes of FOGO waste each year from landfill and into circular economy products like compost.[15]

9. Any other related matter.

(a) Ongoing waste requirements to feed EfW facilities

Another major impact on communities from EfW facilities can be the contracts signed by local government to guarantee supply of waste material as feedstock for that facility. EfW incinerators, operating for 20-30 years, require contracts that guarantee a particular and constant volume of waste to feed a 24-7 incineration process for years to come.

RARVI is concerned that councils supplying waste to such an incinerator will be exposed to considerable financial risks due to long-term contracts. Who will be liable should programs to reduce, re-use, recycle and compost reduce waste streams to the point where contracts cannot be filled? Should contracts not be able to be filled, then financial penalties to EfW operators may be payable by local councils. This could impact funding for local services, with that money being diverted to the incinerator operator to pay the penalties.

We understand that Harrisberg in Detroit, US, is an example of a Council that has been bankrupted due to its inability to fulfill contracts to an incinerator facility. We have repeatedly heard that Sweden is now importing waste from other countries to feed its waste incinerators.

We are concerned that FOGO composting, recycling, reusing and repairing strategies may be bypassed in order to fill incinerator contracts and avoid punishing payments. Due to contractual obligations associated with the new EfW facilities at Rockingham and Kwinana, parts of Perth will not be providing kerbside FOGO collections.

Related to this point, In their 2025 scoping review Tait and Salmona et al. stated:

> *In a policy environment favouring a transition to a reduction and recycling-driven circular economy, the resulting diversion of MSW away from WtE-I [waste-to-energy incineration] means that recouping initial investments in the lifetime of a WtE-I plant may be unrealistic…*

[14] See https://wastemanagementreview.com.au/fornnax-is-transforming-tyres-and-maximising-profit/. Note, however, that RARVI is not in favour of using 'shredded tyre crumbs in any combustion applications'.

[15] See www.epa.nsw.gov.au/Your-environment/Recycling-and-reuse/business-government-recycling/Food-organics-and-garden-organics/fogo-mandates-and-rollout

> *WtE-I will no longer be economically or environmentally justifiable.*
>
> *Funds that are currently allocated towards the development of new WtE-I facilities may generate greater benefit if allocated towards developing a reduction and recycling management approach.*

So, it seems there may be a future battle between the financial viability of EfW facilities or Councils supplying the waste to those facilities.

(b) Relevant international conventions

RARVI reminds the Committee that Australia is signatory to three conventions relevant to the management of waste and development of EfW facilities:

- The **Stockholm Convention** has the objective to minimise or prevent human exposure to Persistent Organic Pollutants (POPs). In Annex C, it deems waste incineration a major source of POPs.[16]
- The **Minamata Convention** aims to protect human health and the environment from the adverse effects of mercury. Annex D of the Convention identifies waste incineration facilities as being in the top 5 sources of mercury emissions[17].
- The **Basel Convention** has the objective to protect human health and the environment against the adverse effects of hazardous wastes and other wastes requiring special consideration. Its aims include the reduction of hazardous waste generation and the promotion of their environmentally sound management. Annex II identifies that residues arising from the incineration of household wastes, to be a waste requiring special consideration[18].

As a signatory to these conventions, all levels of government in this country should adhere to their recommendations.

(c) Industry influence leads to community concerns being ignored

RARVI has observed that governments appear to rely on, and adhere to, advice from industries that may gain financially from particular projects in preference to community input. Ministerial councils advising on 'waste solutions' are often dominated by those in the industry who have an interest in maximising the amount of waste they need to handle.

This results in community feeling they are not being heard by decision-makers.

Again, quoting Orellana:

> *There is a deep disconnect or distance between the government and community narratives concerning toxics.* [19]

Also:

> *Underlying the distance between the State and communities is the perception of tokenistic engagement.*

[16] See www.pops.int/Portals/0/download.aspx?e=UNEP-POPS-COP-CONVTEXT-2025.English.pdf

[17] See https://minamataconvention.org/en/about/convention-text#paragraph-610

[18] See www.basel.int/Portals/4/download.aspx?e=UNEP-CHW-IMPL-CONVTEXT-2023.English.pdf

[19] Human Rights Council (2024) p1 https://docs.un.org/en/A/HRC/57/52/Add.2

> *When public participation is reduced to a checklist, instead of being conducive to a genuine dialogue … dialogue is replaced by anger and distrust.*[20]

(d) Greenhouse gas emissions

One of the reasons greenhouse gas emissions from incineration have been assessed as less than landfill is the release of methane into the atmosphere from organics included in landfill waste. With the widespread adoption of FOGO collections, this advantage disappears. See point 8(g) above.

(e) Plastic-related cardiovascular disease

Another reason to reduce plastics in our environment is to decrease plastic-related cardiovascular disease. Hyman et al. (2025) reported new evidence that plastic polymers and their chemical additives, particularly di-2-ethylhexylphthalate (DEHP) contribute to cardiovascular disease[21]. In 2018, an estimated 356,238 deaths globally were attributed to DEHP exposure, representing 13.5% of all cardiovascular deaths among individuals aged 55–64.

(f) Timing of the release of the *NSW Waste and Circular Infrastructure Plan*

We presume that the release of Chapter 1 of the *NSW Waste and Circular Infrastructure Plan* has been timed to prevent any recommendations from your Inquiry informing its finalisation. From that timing, it could be assumed that the NSW Government is not interested in listening to the Select Committee, in the same way as the Government has not demonstrated any real interest in listening to the communities based in areas proposed for EfW facilities.

In conclusion:

Planning for long term waste infrastructure needs is essential, but we implore the Committee to recommend the NSW Government to examine EfW more closely as in our view it is not the straightforward solution it is presented as by the industry.

Instead, we urge the Committee to recommend that the NSW Government investigates zero waste strategies instead of promoting EfW facilities as the solution to decreasing landfill availability. NSW should adopt measures employed by other large cities and Paul Connett's ten steps towards this goal.[22]

Yours faithfully,

Liz Stops, PhD

Convenor, RARVI Inc.

[20] Ibid, p2

[21] Sara Hyman, Jonathan Acevedo, Chiara Giannarelli, Leonardo Trasande (2025) 'Phthalate exposure from plastics and cardiovascular disease: global estimates of attributable mortality and years life lost' eBioMedicine, Volume 117, 105730, www.thelancet.com/journals/ebiom/article/PIIS2352-3964%2825%2900174-4/fulltext

[22] Connett, Paul., 2013, *The Zero Waste Solution,* p15.