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Working globally for a toxic free future

Submission - SSD-21184278
Woodlawn Advanced Energy Recovery Centre

To whom it may concern,

Please accept this submission on the Veolia Woodlawn Advanced Energy Recovery Centre.

We oppose this project and request that the NSW government rejects the project and refuses to grant any approval or licence to operate.

Our opposition to this project is made for the following reasons:

1. **Veolia have failed to provide an EIS document that is accurate and truthful**. The authors of the report have declared that the EIS document – "*does not contain information that is false or misleading".*

However, Veolia state that: "*Energy from Waste is recognised as a more sustainable waste management technique for residual waste than disposal to landfill. It provides for the recovery of the embedded energy within the waste stream, which contributes to a circular economy and the generation of low-carbon energy. At the same time, it redirects waste from landfill, preserving landfill capacity." ES2 Strategic Context.*

This statement is false and misleading. Firstly, Energy from Waste – is a concept and not a technology. It is clear that this project is a Waste to Energy Incinerator despite the absence of this defining word from the executive summary. There are in fact other Energy from Waste technologies that do not involve combustion such as Anaerobic Digestion and Gas Phase Chemical Reduction. Regardless, this project – a waste to energy incinerator – is not a more sustainable waste management technology for residual waste than landfill. Veolia appears to be suggesting that comparing a landfill that takes organic waste (the fraction of residual waste that creates methane in landfill) is worse than a waste to energy incinerator. However, this is a false comparison. NSW and the federal government are implementing a policy that diverts organic waste away from landfill making such statements redundant. When incineration is compared to landfill that has removed organic waste, landfill is far more sustainable in terms of climate, environment and health impacts. [1],[2],[3]

[1] Eunomia, *Greenhouse gas and air quality impacts of incineration and landfill*, January 2022.
[2] Morris, Jeffrey, Comparative LCAs for Curbside Recycling Versus Either Landfilling or Incineration with Energy Recovery, *The International Journal of Life Cycle Assessment*, July 2005.
[3] U.S. EPA, "Solid Waste Management and Greenhouse Gases, A Life-Cycle Assessment of Emissions and Sinks 3rd edition," 2006.

Furthermore, Veolia state: *It provides for the recovery of the embedded energy within the waste stream, which contributes to a circular economy and the generation of low-carbon energy.*
This is a false and misleading statement. Waste to energy incineration is not a low carbon source of energy. The embedded energy recovered is lost immediately when it is burned, releasing this carbon to the atmosphere permanently. Therefore, waste to energy incineration is a linear process that does not align with the concept of a circular economy. In addition, the carbon intensity of the energy created by a waste to energy incinerator cannot be considered low carbon and in fact is more than twice the carbon intensity of Australia's current electricity grid. While Australia moves to more and more renewable energy sources and implements more sustainable waste management policies, the carbon intensity attributed to waste to energy incineration, will increase.

Zero Waste Europe and many other experts in sustainable waste management systems warn: *Waste-to-energy incineration is sometimes promoted as a low-carbon source of energy, justifying increasing quantities of waste for use in electricity generation. The evidence, however, suggests that the carbon intensity of energy produced through incineration is around 2 times greater than the carbon intensity of the current EU average electricity grid intensity and has significantly more adverse climate impacts than conventional electricity generation from fossil fuels such as gas.*

Moreover, a number of reports indicate that much of what is currently used as incinerator feedstock could instead be recycled or composted, resulting in carbon savings and other environmental benefits. What's clear is that waste incineration is therefore not a low-carbon source of energy, in fact, strategies promoting waste to energy could seriously undermine the EU's efforts to reach netzero climate change emissions by 2050.[4],[5]

It is imperative that State Significant Development projects submit accurate and honest EIS documents so that the public and state regulatory assessors are not misled about the benefits and justification for such high-risk projects. The Executive Summary is clearly false and misleading in its claims about the project's sustainability, low carbon energy and the circular economy. These claims (and worse) have also been consistently made by Veolia at public engagement events and state government waste forums which have led to widespread community misinformation and subsequent false claims of a social licence to operate.

2. **There is no justification for the project**. Veolia currently operate a Mechanical Biological Treatment (MBT) plant at the same project location – Woodlawn Eco Precinct. This facility already processes MSW residual wastes. This technology is capable of treating C&I residual wastes also. The MBT that currently operates could easily be scaled up and retrofitted to become a Mechanical Recovery and Biological Treatment (MRBT) facility that provides superior residual waste treatment compared to waste to energy incineration. MRBT can significantly reduce the volumes of waste sent to landfill, stabilise the remaining wastes going to landfill, eliminate methane

[4] Zero Waste Europe, *The impact of waste to energy incineration on climate*, Sep 2019.
[5] Tangri, Neil. (2021). Waste Incinerators Undermine Clean Energy Goals. 10.31223/X5VK5X.

generation and toxic leachates and avoid the disposal of highly hazardous and toxic incinerator ash wastes that will require secure hazardous waste disposal.[6] [7]

3. **Corporate responsibility claims by Veolia cannot be trusted.** Veolia make many claims that they are part of the solution to address air pollution and climate change. They often claim publicly as can be seen in their social media and advertisements that their waste to energy projects *combat the threat of air pollution by reducing ghg's.*

   However, the reality of waste to energy incineration is anything but a technology to combat air pollution and such greenwashing narratives have the potential to mislead the public, local governments, and government regulators.

   While such claims are concerning and reflect Veolia's corporate agenda rather than the reality of waste to energy incineration, it does suggest strongly that the NSW government needs to consider and evaluate the actual performance and behaviour of Veolia's existing and previous waste to energy incineration operations around the world. The NSW government must consider whether Veolia can in fact comply with their licence and Australian environmental protection standards.

   Therefore, it is imperative that Veolia's prosecution for violating dioxin emissions reporting in Italy, is taken as an indication that Veolia has already displayed disregard for industrial regulation attached to their existing waste to energy incineration facilities.

   This case involved the obfuscation and under-reporting of the actual dioxin emissions being emitted at the Falascaia incinerator in **Pietrasanta**.

   https://www.iltirreno.it/versilia/cronaca/2015/01/30/news/processo-falascaia-condannati-in-quattro-1.10768518

   https://www.quotidiano.net/cronaca/pietrasanta-inceneritore-falascaia-diossina-1.619704

   https://www.lastampa.it/vercelli/2014/03/03/news/chiuso-l-inceneritore-1.35772965/

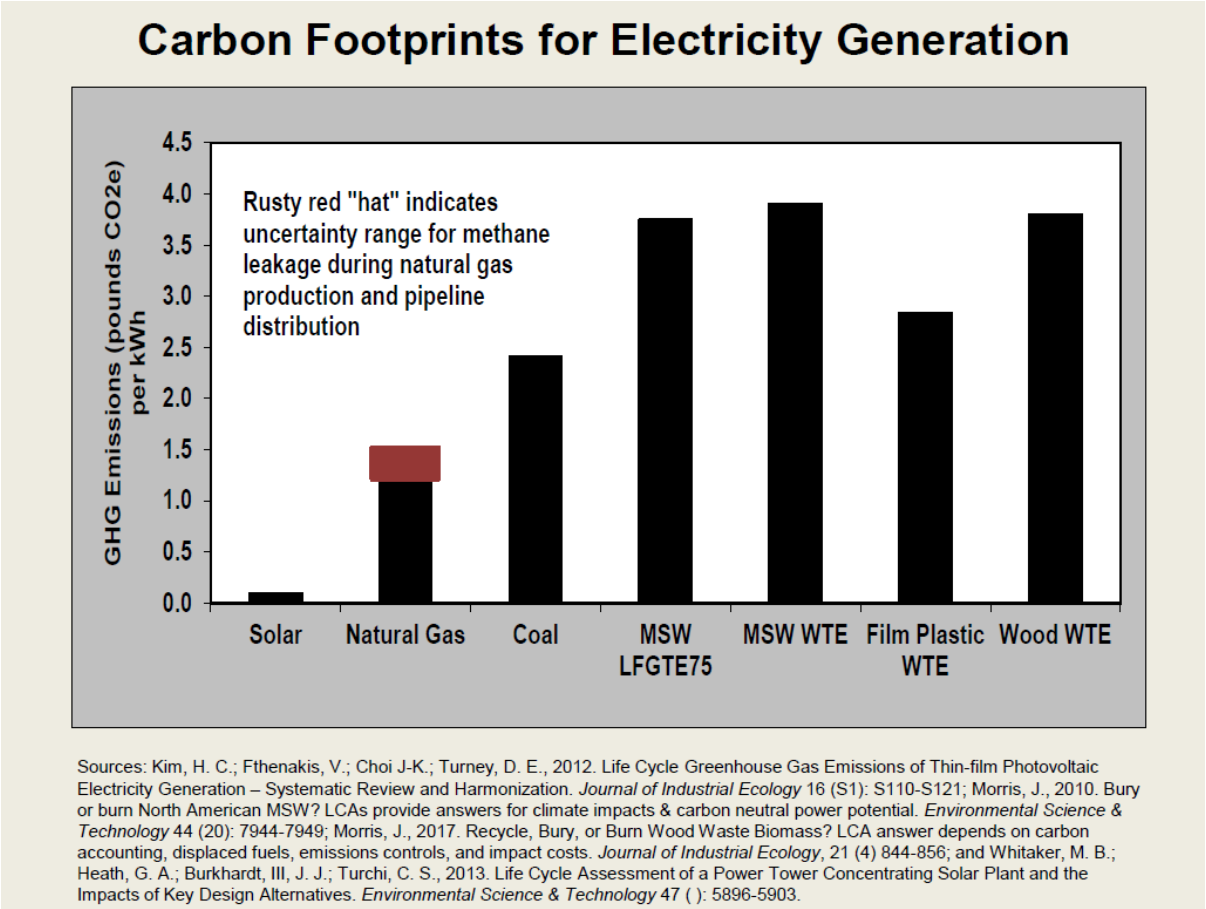
   Furthermore, there have been numerous accidents and fires associated with Veolia incinerators in Europe. These include:
   http://www.tnz.most.org.pl/spalarnie/pliki/spalarnie_francuskie.html

[6] Zero Waste Europe, Building a bridge strategy for residual waste, Policy Briefing, June 2020.
[7] Morris, Lombardi, Favoino, Bailey, *'What is the best disposal option for the 'Leftovers' on the way to Zero Waste?' 2013.*

- -**November 29, 2021: Toulouse incinerator, Veolia**
  A 25 meter silo collapsed with 130 tons of dust from the incinerator.
  Source: Actu.fr
- **July 7, 2019: Flamoval incinerator, Veolia**
  Fire in a waste crusher.
  Source: La Voix du Nord
- **July 3, 2016: Reims incinerator, Veolia**
  Fire 20,000 m2 of stored waste. A similar fire had occurred exactly five years earlier. Then the incinerator was shut down for a long time.
  Source: Arnica
- **February 2, 2016: Hazardous Waste Incinerator, Singapore, Veolia**
  The company is fined $135,000 for violating safety regulations. On November 8, 2013, as a result of an explosion and a large fire, three employees of the incineration plant were injured.
  Source: The Straits Times , The Straits Times
- **February 2015 (released): Guangzhou Incinerator, China, Veolia**
  The incineration plant was commissioned in 2006 and was to operate in accordance with the European emission standard. However, as early as 2009, local authorities were surprised to find unburned shoes, pieces of plastic, rope and clothing in the process waste – indicating that the incinerator was not functioning properly. However, the truly alarming issue was the finding of a surge in cancer incidence, following a medical case study of people living within the incinerator's emission range. In the six years between 1989 and 2005, there were 9 deaths from cancer in a town of 8,000 inhabitants. However, in the years 2005-2009, after the start of operation of the incinerator, 42 cases of cancer deaths have already been recorded. Common ailments included nasopharyngeal tumors and asthma. An analysis of health records from three villages near the incinerator found no cases of respiratory cancer between 1993 and 2005. However, three years after the incinerator started operating, there were 13 cases of respiratory cancer.
  Source: IPEN
- **January 29, 2015 (publication): Falascaia incinerator, Pietrasanta, Italy, Veolia A** court in Luca sentenced four members of the management of the incineration plant to six months in prison, a €15,000 fine and payment of court costs for dioxin and water contamination of the soil and the Baccatoio River.
  Sources: Il Tirreno , Quotidiano Nazionale
- **March 3, 2014 (publication): Vercelli incinerator, Italy, Veolia**
  The regional authorities decided to close the incinerator prematurely due to the increased level of illness among residents. Compared to the statistical average, people living near the incinerator had a higher incidence of: colorectal cancer (+35%), chronic liver disease and cirrhosis (+30%), hypertension (+20%), chronic obstructive pulmonary disease (+20%) 12%), depression (+10%).
  Sources: La Stampa , Agenzia Regionale per la Protezione Ambientale - ARPA
- **June 12, 2013: Nîmes incinerator, Veolia**
  The explosion of a waste preparation plant ignites 2,200 tonnes of waste and damages the wall of the plant building.
  Source: France 3 Occitanie

4. **Veolia's claims about the predicted air emissions from this project are questionable.** Veolia claim that the project will emit 74 611 tpa of CO2, yet similar sized plants utilising the same volumes and types of feedstocks (MSW and C&I) report much higher CO2 emissions. For example, Veolia's plant in Lewisham, Southeast London (SELCHP) in 2020 emitted 410 971 tpa of CO2 in the year that it burnt 369 000 tonnes of waste.
https://ukwin.org.uk/incinerators/library/South+East+London/50

   It is widely accepted by independent experts that the GHG emissions from waste to energy incinerators are in the order of twice the volume of waste burnt. For example, a 380 000tpa waste to energy incinerator will emit at least 720 000tpa of CO2. The predicted CO2 emissions in the Veolia EIS appear to be vastly underestimated. Dr Jeffrey Morris – an expert in life cycle analysis – identifies waste to energy technologies as consistently emitting more CO2e than solar, gas and coal.



Sources: Kim, H. C.; Fthenakis, V.; Choi J-K.; Turney, D. E., 2012. Life Cycle Greenhouse Gas Emissions of Thin-film Photovoltaic Electricity Generation – Systematic Review and Harmonization. *Journal of Industrial Ecology* 16 (S1): S110-S121; Morris, J., 2010. Bury or burn North American MSW? LCAs provide answers for climate impacts & carbon neutral power potential. *Environmental Science & Technology* 44 (20): 7944-7949; Morris, J., 2017. Recycle, Bury, or Burn Wood Waste Biomass? LCA answer depends on carbon accounting, displaced fuels, emissions controls, and impact costs. *Journal of Industrial Ecology*, 21 (4) 844-856; and Whitaker, M. B.; Heath, G. A.; Burkhardt, III, J. J.; Turchi, C. S., 2013. Life Cycle Assessment of a Power Tower Concentrating Solar Plant and the Impacts of Key Design Alternatives. *Environmental Science & Technology* 47 ( ): 5896-5903.

The comparatively higher ghg emissions from waste to energy incinerators than renewable and fossil fuel energy sources is well understood despite the waste incineration sector arguing otherwise in attempts to greenwash their industry as a clean energy technology. However, waste to energy incineration is actually the most expensive and polluting way to make energy and manage residual waste.
Please see:

Waste Incinerators Undermine Clean Energy Goals, Neil Tangri, Global Alliance for Incinerator Alternatives, 1958 University Ave., Berkeley CA 94704 USA, tangri@alumni.stanford.edu

Greenhouse Gas and Air Quality Impacts of Incineration and Landfill, Eunomia, Report to the National Toxic Network, January 2022 https://zerowasteaustralia.org/2022/04/22/climate-and-health-impacts-of-waste-incinerators-are-worse-than-landfill/

The High Cost of Waste Incineration, GAIA, www.doi.org/10.46556/RPKY2826 https://www.scribd.com/document/542106159/The-High-Cost-of-Waste-Incineration-March-30

https://www.energyjustice.net/incineration/expensive-energy

In Europe, waste incineration is recognised as a climate threat causing the European Commission to withdraw all clean and renewable energy subsidies and funds. https://climate-adapt.eea.europa.eu/en/metadata/publications/taxonomy-final-report-of-the-technical-expert-group-on-sustainable-finance

UKWIN, *Good Practice Guidance for Assessing the GHG Impacts of Waste Incineration,* JULY 2021. https://www.youtube.com/watch?v=jyPwxlNz854

https://zerowasteeurope.eu/2021/08/guide-warns-incinerator-ghg-emissions-often-worse-than-predicted/

The Western Australian EPA now recognises Waste to Energy incineration as a significant climate threat sitting alongside major fossil fuel project - https://www.epa.wa.gov.au/policies-guidance/environmental-factor-guideline-%E2%80%93-greenhouse-gas-emissions-0

5. **Veolia's EIS has failed to address OTNOC events**. EU Best Practice waste to energy incinerators currently operating to the EU WID standards have shown to be emitting much higher levels of Persistent Organic Pollutants than reported. This is due to the incinerator's emissions during bypass events (such as APC cleaning and other maintenance events). These emissions are not regulated but occur on a regular basis, with some EU incinerators reporting at least 12 OTNOC events a year. Yet it only takes one OTNOC event for an entire annual emissions limit to be reached for dangerous POP's like Dioxin. Surrounding environments in the Netherlands within a 10km radius of best practice EU incinerators, such as agricultural areas where vegetables, eggs and meat industries operate, have shown elevated levels of dioxins exceeding permissible health standards in the soil and produce. It is inevitable that this project will deposit "forever chemicals" such as dioxins into the surrounding

environment risking the agricultural and tourism sector as well as the health and wellbeing of those living and working close by.

Arkenbout, A. (2018). Hidden Emissions: A story from the Netherlands, a case study, Zero Waste Europe, www.zerowasteeurope.eu

Arkenbout, A. (2019). The hidden impacts of incinerator residues, Zero Waste Europe

Arkenbout, A, 2020. Hidden temperatures: Emissions implications in the post-combustion zone of waste incinerators, Zero Waste Europe

More information on the biomonitoring of Europes Best Practice Waste Incinerators https://www.toxicowatch.org/

More information on biomonitoring environmental pollution surround waste incinerators:

Monitoring dioxins and PCBs in eggs as sensitive indicators for environmental pollution and global contaminated sites and recommendations for reducing and controlling releases and exposure, JindrichPetrlik[ab]LeeBell[ac]JoeDiGangi[a]Serge MollyAllo'o,Allo'o[d]GilbertKuepouo[e]GriffinsOchiengOchola[f]ValeriyaGrechko[bg]NikolaJelinek[b]JitkaStrakova[ab]MartinSkalsky[h]Yuyun IsmawatiDrwiega[i,] JonathanN.Hogarh[j]EricAkortia[k]SamAdu- Kumi[l,] AkaraponTeebthaisong[m]MariaCarcamo[n]BjornBeeler[a]PeterBehnisch[o]ClaudiaBaitinger[p]ChristineHerold, RolandWeber[q]
https://www.sciencedirect.com/science/article/pii/S2405665022000166?via%3Dihub

6. **Veolia's waste to energy incinerator project has no social licence to operate in Australia as it subverts better waste management (undermining both state and federal waste policies), climate policy and environmental protection. The project will inflict unacceptable pollution burdens on regional NSW and the industries, businesses and communities that reside there. For the following reasons, we request that this project be rejected.**

Waste incinerators are a polluting, expensive and unsustainable technology that undermines zero waste strategies (such as recycling and composting) and stifles innovation in the waste management and energy sectors.
Burning resources and creating toxic pollution, whether for energy generation or waste management disposal, makes no sense if we are serious about reducing greenhouse gas emissions and addressing climate change.

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. Incinerators also emit nanoparticles, toxic heavy metals such as lead, mercury and arsenic and acid gases that have serious impacts on human health. Many of these pollutants are carried on the wind impacting communities and

ecosystems long distances from the point of origin. Australia is a signatory to the Stockholm Convention, which obliges us to reduce, and where feasible, eliminate all intentional and unintentional 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.

Waste incinerators all generate ash that is contaminated with toxic heavy metals and persistent organic pollutants (POPs) such as dioxins and furans. The levels of contamination vary according to the waste burned, the process used and configuration of the pollution controls on the smokestack but all solid and air emissions contain contaminants, many of which can be at a level that can impact on human health and the environment depending on the disposal method and exposure. According to the incinerator industry most incinerators generate 1 tonne of contaminated ash for every 4 tonne of waste burned. This includes smaller volumes of highly toxic 'fly ash' and larger volumes of less toxic 'bottom ash'. There is no market for incinerator ash and it must be disposed of to landfill.

Waste incinerators have re-branded themselves as 'green' energy suppliers. The reality is that burning waste is the dirtiest form of energy generation both in toxic emissions and climate change gases. Waste burning facilities produce far more carbon dioxide per unit of energy generated than coal, oil or gas fired power stations. In addition to producing larger quantities of greenhouse gas per energy unit than coal, incinerators also destroy the resources' in waste that could be recovered if the discarded material in waste were recycled or reused. Much of the waste material burned in incinerators is based on petrochemicals. These include plastic bottles, bags, packaging and even electronic waste. Petrochemicals are fossil fuels and burning plastics derived from fossil fuels does not create 'green' energy – it is simply burning fossil fuels in another form.

Waste incinerators destroy the resources entrained in waste including the embedded energy. The embedded energy in any given product includes the energy expended in extracting resources, refining, manufacturing and transporting the product to the point of sale.

This energy is lost when a discarded product is burned in an incinerator and the whole cycle must begin again. Most of this energy is retained when the discarded product is recycled or reused. The only energy 'recovered' from burning a product in an incinerator is the 'calorific' energy of that item – in other words - the small amount of heat energy it contains. For example, burning a PET plastic water bottle yields 3.22 gigajoule per tonne whereas recycling it *saves* 85.16 gigajoule per tonne. That means recycling a PET plastic bottle saves 26.4 times the energy that burning yields demonstrating that incinerating waste is an enormous waste of energy.

Waste incinerators seek the highest calorific value fuels available to burn as this increases the efficiency of their energy. Unfortunately, those high calorific value wastes are also highly valued for recycling. These include plastics, paper, woodwaste

and cardboard. By competing for the same materials as recycling operations incinerators undermine the recycling sector and destroy valuable resources and their embedded energy. When a discarded product is burned, it is converted to energy, toxic emissions and contaminated ash. The discard is destroyed forever, and the energy intensive process of material extraction, refining, manufacture and transport must be repeated to replace that product. The alternative of recycling and re-use of such materials retains most of that embedded energy and reduces the inputs to the production and consumption cycle.

For organic materials, such as food waste, soiled paper, cardboard and timber derivatives, composting retains the valuable resource and converts it into much needed agricultural fertilisers and soil conditioners that increase productivity and save water. Anaerobic digestion of organics prior to composting also gives the added benefit of generating energy through biogas production, a 'cool' WtE technology. Incineration of organic materials denies the potential for these further beneficial uses.

Waste incinerators require waste supply contracts that last for 25-30 years to become financially viable and to ensure their fuel supply. This means that local governments must supply the incinerators with a steady flow of waste at an agreed volume for that period of time. If the waste stream is locked in for decades, alternative waste treatment technologies including recycling, re-use, composting and anaerobic digestion are effectively stymied. This is a significant barrier to achieving sustainability as new developments in environmentally friendly technology are prevented from accessing the resources.

Independent studies have reported that waste management systems that use recycling, re-use, composting and anaerobic digestion generate many more jobs and far outstrip the few positions required to run an incinerator.

In general terms waste incinerators are expensive, computer controlled, largely automated technology that only require a small workforce to operate. Conversely waste management systems based around recycling, re-use and 'cool technologies' have a high employment generation potential and flow-on effects throughout the community and economy. Installing a waste incinerator means that communities forego employment opportunities while squandering valuable resources.

Waste incinerators are expensive to build, operate and upgrade and require public subsidies to become financially viable. By claiming to produce 'green' energy incinerator operators can obtain public subsidies, credits, tax breaks and transferable benefits that should be spent on assisting real 'green' energy projects to establish such as wind, wave and solar power. The incineration industry claim that because a fraction of waste they burn is 'biogenic' in origin (such as paper and other organics) they should be classed as 'renewable' energy generators and given access to taxpayer subsidies for green energy projects. This undermines real renewable energy and diverts funds away from genuine green energy projects.

Waste incineration entrenches a linear economy in our society that relies on the extraction of virgin materials and rewards consumptive and wasteful lifestyle choices. Our society needs to transition as soon as possible to a circular economy where resources are not destroyed through landfills or incineration but rather are conserved through reuse, recycling and composting schemes generally known as **Zero Waste Solutions.**

See more here:
https://zerowasteaustralia.org/2018/06/01/a-consensus-statement-zero-waste-solutions-for-australia-not-waste-incineration/

https://zerowasteaustralia.org/publications/

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