



wasteMINZ

Behaviour Change Sector Group Position Paper on large scale Waste-to-Energy proposed to take municipal waste

WasteMINZ' Behaviour Change Sector Group is urging central government to take decisive action on the issue of Waste to Energy (WtE) by declaring a moratorium on any proposal of a WtE facility that aims to process municipal waste (including those that are currently being considered) until concerns are addressed.

Approximately five waste-to-energy (WtE) incinerators have been proposed in small New Zealand communities to take municipal waste at a time when European countries are rethinking their WtE facilities as part of their transition to a circular economy".ⁱ These proposals take up a lot of community and council time and resources as they must quickly become experts in this very technical subject matter.

This position paper has been produced by WasteMINZ' Behaviour Change Sector Group to support the work that has already been done on this topic by the Zero Waste Network and Para Kore and to urge central government action. It focuses on large scale WtE facilities that propose an alternative way of managing household waste and does not include smaller scale facilities that power an industrial site using a specific waste material instead of fossil fuel or technologies such as anaerobic digestion that use a non-thermal process to turn organic waste into a gas for energy as well as soil conditioners.

We urge central government to declare a moratorium on any proposal of a WtE facility that aims to process municipal waste (including those that are currently being considered) until:ⁱⁱ

- independent and comprehensive research to investigate whether large WtE proposals fits into Aotearoa's low carbon and circular economy future is completed by either the Prime Minister's Chief Science Advisor or Parliamentary Commissioner for the Environment;
- Para Kore is funded to work with iwi and hapū to develop a perspective on WtE that reflects Te Ao Māori principles so that individual hapū and iwi do not have to rapidly develop expertise to form a view on whether they support a proposal in their takiwā or not;
- policy is developed outlining how the waste disposal levy will be applied to any proposal to dispose of municipal waste using WtE to create a level playing field;

- the NZ Waste Strategy and Emissions Reduction Plans targets to reduce waste generation and carbon impacts of waste are finalised, so feedstock estimations for WtE can be assessed against these.
- resource management reforms are completed and include criteria for consideration of carbon impacts of proposals.

The problem with WtE from a waste minimisation perspective:

The Ministry for the Environment has clearly stated its ambitions for a circular economy (CE) for Aotearoaⁱⁱⁱ and provides the simple definition for CE as “ensur[ing] we can unmake everything we make”. Large WtE facilities are in direct contradiction to a circular economy as they are focused on disposing of waste instead of reducing the creation of it and demand a constant supply of a fixed amount of waste, rather than being able to downsize or delay future capacity as the overall creation of waste is reduced or recovered for reuse, recycling or composting. The Global Contracting solutions proposal would burn 480 tonnes of waste per day^{iv} which is more than six times what is produced daily by the Waipā district.^v There is no mention in the resource consent application about where this waste would come from and whether waste contractors would actually sell waste to the facility, so security of feedstock is unknown.

The Ministry for the Environment’s Waste to Energy Guide for NZ^{vi} advises that “technology that uses renewable feedstock is likely to be preferable”. It then goes on to note that “If the waste feedstock is derived from fossil fuels, like plastic waste, this is not a renewable material and the plant will not produce renewable energy. Mixed solid waste is typically a mixed waste stream, consisting of both waste derived from fossil fuels and waste derived from biogenic and organic material.” One WtE proposal in NZ states that it will “help... create a springboard to further uptake of renewables”^{vii} despite the intention to use municipal solid waste (excluding putrescible waste) as the fuel, with an expected 20% of the refuse being plastic.^{viii}

It is also important to note that while large WtE proposals are sometimes promoted as being a replacement for landfill,^{ix} they will not in fact replace landfills as the toxic ash that is produced from WtE still needs to be disposed of in landfills. Waste Management, one of NZ’s largest waste companies has indicated that the toxicity levels of the ash may exceed what is accepted at New Zealand landfills.^x If the ash is not acceptable in New Zealand landfills it will either need to be treated so that it is acceptable or it will have to be shipped to France for special disposal. This would increase carbon emissions due to the associated transport involved.

The problem with WtE from a carbon emissions perspective:

According to a Zero Waste Europe policy briefing, incineration of household rubbish “is an ineffective way of producing energy, with a higher unit emissions of fossil CO₂ per kWh than

conventional fossil fuel power stations”.^{xi} The Intergovernmental Panel on Climate Change notes that each tonne of waste burned produces more than that (1.2 tonnes) in carbon emissions. Carbon dioxide emissions from WtE plants in Denmark are preventing it from meeting its climate change targets.^{xii} Large WtE proposals that aim to provide a ‘solution’ to the problem of municipal waste have no place in Aotearoa’s climate action obligations. WtE facilities make no sense in a country that uses mostly renewable sources for power generation and they make no sense in a country that is working hard to reduce emissions in the waste sector by tackling the source of waste creation.

Additionally, WtE proposals for dealing with large amounts of municipal waste fail to take into account the inter-regional costs (both from a financial and emissions perspective) of transporting waste across regions, which will be necessary in order to fulfil the amount of waste needed to keep the WtE plant going. Denmark^{xiii} and Sweden^{xiv} both import waste from other countries to keep their WtE plants running. As noted above, the facility proposal for Waipā would need to import waste from other regions as the Waipā district does not generate the volume required to keep the facility running.

The problem with WtE from an air quality and human health perspective:

In 2018 an incineration plant in Sydney was blocked when the New South Wales Independent Planning Commission ruled there was “uncertainty” over human health and environmental impacts.^{xv}

A recent UK report notes that despite efforts to minimise the air emissions from W2E, the ultrafine particles created by the fly ash from W2E plants negatively impact on human health. “Of critical importance is ... the number of particulates, as opposed to their combined mass, that is the key determinant for human ill health. The smallest particulates act like a gas and penetrate seamlessly into the blood stream and organs, creating damage to the hearts, brains, and lungs of victims.”^{xvi} The report notes that while incinerators are regulated and need to obtain permits, the regulated pollutants are limited to a relatively narrow list and don’t include brominated dioxins that are emitted by incinerators that burn flame retardants, for example.^{xvii}

The problem with WtE from a Te Ao Māori perspective:

Different iwi and individual Māori do of course have different perspectives on WtE just as different non-Māori organisations and individuals do. However, the biggest kaupapa Māori organisation working in the waste and resource recovery sector, Para Kore stated in their submission to the Global Contracting Solutions proposal in Waipā:

“[S]ettler colonialism has formed the foundation of our current linear and extractive systems and economy. Waste incinerators condone linear, extractive, and colonial methods to dealing with waste. Waste incinerators pose huge health risks as they generate tonnes of toxic ash and emit cancer-causing dioxins. [WtE] ventures...undermine efforts to minimise waste and are a false solution to the cause. Such ventures are also a breach to Te Tiriti in that they fail to protect taonga like our natural ecosystems, waterways and air quality.”^{xviii}

The Bio Plant Manawatū proposal was not supported by Ngā Kaitiaki o Ngāti Kauwhata nor the Aorangi Marae Trustees (and by extension the hapū of Tahuriwakanui, hapū of Ngāti Kauwhata iwi). Dennis Emery on behalf of Ngati Kauwhata spoke about the concept of hāparu which was described as “to dirty the essence of life” and noted that “The discharge of toxic contaminants or odour to the air is not just a hē or wrong, but a hara or spiritual offence which would bring serious misfortune to the offenders and their hapū”.^{xix} The Aorangi Marae Trustees stated:

“As Mana Whenua, our kaupapa, our purpose, is to protect the Aorangi, or skies above us, and the Hautapu, or sacred winds and airways, around us. The prospect of pyrolysis is a frightening one for our people, it threatens to destabilise our commitment to the kaupapa of our ancestral home Aorangi, and threatens to diminish our collective capacity to practice Kaitiakitanga, or environmental stewardship”^{xx}

The problem with WtE from a financial perspective:

Currently only waste to landfill has a waste disposal levy applied to it. As noted in the Global Contracting Solutions resource consent application the increase in waste disposal levies will create an uneven playing field in which WtE benefit because there is no waste disposal levy applied to this method of disposal.^{xxi}

Waste Management has done years of research (including visiting countries where it is in use) into the potential role of WtE in New Zealand and has concluded that they are uneconomic, requiring at least four times the capital and operational cost of modern landfills for the equivalent waste volume. To make it worth the initial considerable set up costs, a guaranteed specific volume of continual waste (often including potentially recyclable materials) is needed for the efficient operation of the plant to make it financially sustainable.^{xxii}

WtE proposals are sometimes framed as being a way of creating local jobs.^{xxiii} However, a recent report found that repair creates 200 times more jobs than WtE and recycling creates 50 times more jobs than WtE.^{xxiv} Repair jobs in particular are more beneficial for small communities as they develop skills and build social capital. They are also more aligned with a circular economy.

The problem with WtE from a local government perspective:

All local authorities are required under the Waste Minimisation Act 2008 to have a Waste Minimisation and Management Plan which are required to be reviewed every 6 years. The MfE guidelines on WMMP state:

The legislation enables councils to use various tools to influence, promote and implement measures to manage and minimise waste. The WMMP is intended to be the guiding document for councils to promote and achieve effective and efficient waste management and minimisation within their districts.

Despite the significance of WMMPs, a WtE proposal that contradicts the aims of a WMMP (specifically the aim of minimising waste) cannot halt the proposal proceeding, as WMMPs are not included in the district or regional plans that must be taken into account when making a resource consent application.

- Council staff (in waste and consent areas) are not experts in WtE, and would have limited knowledge to assess veracity of claims in applications, and consultant experts are likely to be overseas as NZ has no WtE industry.
- The range of impacts able to be considered are very narrow. For example, feedstock ownership, what happens to waste sorted out of district, carbon impacts, health impacts on residents and community are not able to be considered in a land use consent by a local council.
- Many environmental costs are externalised e.g. putrescible waste sorted out of council area, tradewaste trucked into other council area.
- High bar to trigger a notified consent, so community have no opportunity to have their say.
- It is possible that waste staff at councils are not brought into the resource consent process from the start and only have a limited opportunity to inform the view on the proposal once a land use consent is applied for.

The problem with WtE from a behaviour change perspective:

It is widely understood that information alone does not change behaviour. Nudging or shaping people's behaviour by changing the environment is a better way of altering behaviour^{xxv}. The problem with WtE from a behaviour change perspective is that the "solution" it offers is reliant on the continued generation of waste. This is in direct contrast to solutions such as product stewardship, right to repair and further of the waste hierarchy activities such as reuse which aim to reduce the creation of waste in the first place.

WtE supports the status quo by providing a "solution" to dealing with waste created instead of addressing the causes of the waste problem which are over consumption, lack of durability and the proliferation of single use packaging.

Conclusion

The Behaviour Change Sector Group Steering Committee urges the New Zealand Government to: declare a moratorium on any proposal of a waste to energy facility that aims to process municipal waste; instigate comprehensive research on the role of large WtE proposals in Aotearoa's low

carbon and circular economy future; fund Para Kore to work with iwi and hapū to develop a perspective on WtE that reflects Te Ao Māori principles; and in case of an outcome from the independent research that supports the continuation of proposals for large WtE, apply the waste disposal levy to any proposal to dispose of municipal waste to WtE.

ⁱ Gina Dempster in <https://www.odt.co.nz/lifestyle/magazine/rubbish-plan>

ⁱⁱ Not included in this are specific facilities that deal with a particular waste stream for which there is currently no better option and which replaces the use of a fossil to provide energy, or non thermal processes such as Anerobic Digestion.

ⁱⁱⁱ See for example, <https://environment.govt.nz/what-government-is-doing/areas-of-work/waste/ohanga-amiomio-circular-economy/> and <https://www.beehive.govt.nz/release/kiwis-have-their-say-plan-reduce-waste>

^{iv} <https://www.waipadc.govt.nz/repository/libraries/id:26zg4o7s1cxbyk7hfo7/hierarchy/our-services/planning-and-resource-consents/Consent%20Applications%20of%20Interest/LU%200323%2021/Application%20and%20AEE.pdf>, p 19

^v <https://www.waipadc.govt.nz/repository/libraries/id:26zg4o7s1cxbyk7hfo7/hierarchy/agendasandminutes/Agendas%202022/August%202022/Service%20Delivery%20Public%20Agenda%20-16%20August%202022.pdf> NB this includes putrescible waste which is excluded from the proposal.

^{vi} <https://environment.govt.nz/assets/Publications/Files/waste-to-energy-guide-for-new-zealand.pdf>, page 2.

^{vii} <https://www.waipadc.govt.nz/repository/libraries/id:26zg4o7s1cxbyk7hfo7/hierarchy/our-services/planning-and-resource-consents/Consent%20Applications%20of%20Interest/LU%200323%2021/Application%20and%20AEE.pdf>, p 2.

^{viii} Ibid, p 27.

^{ix} See for example <https://www.stuff.co.nz/timaru-herald/news/128477934/company-behind-controversial-waste-plant-buys-land-near-waimate>

^x <https://www.wastemanagement.co.nz/news-and-media/waste-to-energy-in-new-zealand/>

^{xi} <https://zerowasteurope.eu/library/the-impact-of-waste-to-energy-incineration-on-climate/>

^{xii} <https://www.politico.eu/article/denmark-devilish-waste-trash-energy-incineration-recycling-dilemma/>

^{xiii} <https://www.politico.eu/article/denmark-devilish-waste-trash-energy-incineration-recycling-dilemma/>

^{xiv} <https://rioonwatch.org/?p=54109>

^{xv} <https://www.theguardian.com/environment/2018/jul/19/sydney-waste-power-incinerator-knocked-back-over-air-quality-fears>

^{xvi} <https://www.theguardian.com/environment/2021/dec/14/mps-call-for-halt-to-britains-incinerator-expansion-plans>

^{xvii} <https://appgaq.files.wordpress.com/2021/12/211208-waste-incineration-and-public-health-appg-air-pollution-report.pdf>

^{xviii} From a Para Kore letter to the Consents Officer at Waipā District Council regarding the Global Contracting Solutions proposal in Waipā.

^{xix} <https://www.horizons.govt.nz/HRC/Bio-Plant-Manawatu-NZ-Limited/Bio-Plant-Manawatu-NZ-Limited/10.%20Tabled%20Documents%20Submitter%2097,%20Dennis%20Emery%20on%20behalf%20Nga%20Kaitiaki%20O%20Ngati%20Kauwhata%20Incorporated.pdf>

^{xx} https://www.horizons.govt.nz/HRC/Bio-Plant-Manawatu-NZ-Limited/Bio-Plant-Manawatu-NZ-Limited/20.%20Tabled%20Documents%20Aorangi%20Marae%20and%20Papaka%CC%84inga%20Submisson%20Part%20II_.pdf

^{xxi} <https://www.waipadc.govt.nz/repository/libraries/id:26zg4o7s1cxbyk7hfo7/hierarchy/our-services/planning-and-resource-consents/Consent%20Applications%20of%20Interest/LU%200323%2021/Application%20and%20AEE.pdf>, p 91

^{xxii} <https://www.wastemanagement.co.nz/news-and-media/waste-to-energy-in-new-zealand/>

^{xxiii} <https://www.rnz.co.nz/news/business/451555/huge-waste-to-energy-plant-proposed-in-south-canterbury>

^{xxiv} <https://www.no-burn.org/wp-content/uploads/2021/11/ZeroWasteJobs-Infographic-1.pdf>

^{xxv} <https://effectiviology.com/nudge/>