Te Kaunihera-ā-Rohe o Taratahi
CARTERTON DISTRICT COUNCIL

24 April 2026

[redacted]

Tēnā koe [redacted]

LOCAL GOVERNMENT OFFICIAL INFORMATION AND MEETINGS ACT Request: 2026-30

Thank you for your email and the RDF PEF fact sheet attached as **Appendix A**, of Monday 20 April 2026 to the Carterton District Council requesting the following information:

> ***"SUBJECT: Use of Refuse Derived Fuel, Solid Recovered Fuel (SRF) and Process Engineered Fuel (PEF)***
>
> *We are writing because we have become aware that some local councils have been approached with a proposal to use their community's landfilled waste to create Process Engineered Fuel (PEF). There is already a facility in Pōkeno creating PEF from plastic waste that is burned in the Whangārei cement kiln.*
>
> *We have prepared the attached Fact Sheet that outlines the current situation (as we understand it) and some of the key issues for local councils.*
>
> *We are keen to keep abreast of any proposals in your region, engage in discussion on this issue and welcome your contact at any stage on this or other waste-related issues. We are part of WasteMINZ and regularly interact with the TAO Forum."*

Your request has been considered under the Local Government Official Information and Meetings Act 1987 (the Act).

The former Carterton landfill has been closed and capped. Carterton operates a waste transfer station in partnership with Masterton District Council where solid waste is taken for processing. We have no plans to create PEF at our transfer station.

Please note, the Council proactively publishes LGOIMA responses on our website. As such, we may publish this response on our website after five working days. Your name and contact details will be removed.

Thank you again for your email. You have the right to ask an Ombudsman to review this decision. You can do this by writing to info@ombudsman.parliament.nz or Office of the Ombudsman, PO Box 10152, Wellington 6143.

Nāku noa, nā

Geoff Hamilton
Chief Executive
Carterton District Council

REGENERATION NOT INCINERATION

Fact Sheet: Refuse/Rubbish Derived Fuel, Solid Recovered Fuel (SRF) and Process Engineered Fuel (PEF)

What is it?

Refuse/Rubbish Derived Fuel (RDF) is the name for the process by which waste is converted into a combustible product. Solid Recovered Fuel (SRF) and Process Engineered Fuel (PEF) are different names for Refuse/Rubbish Derived Fuel. In effect, these are greenwashing terms that purport to turn 'waste' into 'fuel' to make the idea of burning it seem more acceptable.

Waste is sorted, dried and shredded and sometimes ground down, with the resulting materials then burned in so-called waste-to-energy incinerators, cement kilns or other industrial boilers. Different waste streams in different compositions are used in order to create a product: some use mixed plastic wastes; others use mixed solid waste (MSW) and commercial and industrial wastes (C&I) as the basis for their product. Process Engineered Fuel is RDF that has been further processed into a standardised form (such as small pellets or briquets). There is a big difference between torrefied or "roasted" wood pellets and Refuse/Rubbish Derived Fuel.

(Note: This fact sheet does not address untreated wood waste-to-energy processes or products such as wood pellets.)

What is the current situation in Aotearoa NZ?

- A company named EnviroNZ has a Pōkeno (Auckland) plant that it says, "processes nonrecyclable plastic and other suitable materials, to create a PEF. It is currently being used by Golden Bay in its cement kiln, as one of the alternatives to imported coal." A more extensive list of items that go into the fuel is here including certain types of packaging, textiles and by-products such as plastic wrapping.

- PEFCO is a Lyttleton-based company that says it "processes non-recyclable waste into high-density engineered fuel pellets." They do not currently have an

operational plant, but have indicated that their, “first plant is planned for the South Canterbury region.”
    - We are aware that PEFCO has approached some South Island councils with their proposal to use landfill waste.
    - The company indicates that PEFCO pellets can be immediately substituted into a coal boiler. There is no advice about consents.

What are the issues?

The issues arising from the production of Refuse/Rubbish Derived Fuel are closely related to those in the building of actual waste incinerators.

- The feedstock used to create Rubbish Derived Fuel will almost certainly include hazardous wastes. For example, MSW contains discarded hazardous chemicals such as garden pesticides and herbicides, chlorinated solvents, sodium hypochlorite, mercury in broken light bulbs, shattered fragments of PVC plastic pipes, fittings, batteries containing hazardous heavy metals and many other items. This would turn coal boilers into hazardous waste incinerators when using RDF as a fuel. Hazardous waste incinerators are unlawful under the NESAQ.

- The removal of hazardous materials and chemicals of concern from mixed plastics, MSW and C&I is highly unlikely, if not impossible. They are ingredients in the products and packaging and can’t be separated out in a mechanical process. Examples include brominated flame retardants used on upholstery, in electronics and furniture foam, and PFAS ‘forever chemicals’ used to waterproof paper cups, clothing and carpets. The incomplete combustion of chlorinated, fluorinated and brominated products results in the production of dioxin.

- According to the World Health Organisation there is no safe level of exposure to dioxin due to its high toxicity and long half life in the body. WHO recommends limiting exposure through ‘*strict control of industrial processes to reduce formation of dioxins as much as possible*’.

- More than 4,000 chemicals found in plastics are of concern due to their persistent, bioaccumulative, and/or toxic properties.

- Some RDF processes can create large quantities of contaminated processing water.

- The production of RDF creates vast quantities of microplastics adding to airborne plastic pollution.[1]

- Coal boilers are not designed to burn mixed waste so burning RDF has negative impacts altering the combustion process, efficiency and residue, including dioxin contaminated fly ash and bottom ash.

- Burning plastic waste does not create renewable energy. It creates the same GHG emissions as other fossil fuels. 'Waste' is not a sustainable or renewable feedstock. Pollution, ecosystem damage, resource depletion and GHG emissions are created during linear extraction, production, consumption and disposal processes. RDF manufacture is energy intensive. Electricity is required to power the sorters, shredders, grinders and conveyor belts; to heat and pressurise processing chambers; and to dry or roast the waste before it is compressed into solid pellets or briquets.

- When using a mixed waste stream as the basis for the RDF, the industry claims that it reduces greenhouse gas emissions, though it appears to do so using a carbon accounting loophole. While the biomass components (wood, paper and cardboard) do add significant carbon to the atmosphere, contributing to climate change when burned, those emissions aren't counted because the burning of biomass is classified by United Nations rules as carbon neutral, since trees can eventually be regrown. This argument relies on biomass being regenerated as fast or faster than it is being burned/consumed. Globally there is a net loss in forests, with deforestation happening much faster than regeneration. **Nature does count those emissions, which do add to near-term climate change.**

- The industry claims that it is not, "*advocating for more plastic production, but rather encouraging the responsible management of unrecyclable plastic that already exists.*" However, this is a sleight-of-hand, circular argument:
    - The capital investment in building these facilities is significant, meaning that once they exist, they lock in waste and plastic production by providing an easy pathway for plastic production to continue. The RDF producers have an incentive to oppose waste minimisation regulation, projects and programmes to maintain access to the rubbish as feedstock.

[1] Anastasiia Sholokhova, Gintaras Denafas, Valeriy Mykhaylenko. (2022) "Microplastics generation and concentration during mechanical-biological treatment of mixed municipal solid waste." *Environmental Research*, Volume 214, Part 1,. https://doi.org/10.1016/j.envres.2022.113815

- Producers of plastic, plastic products and plastic packaging point to waste to energy and RDF options to justify continued use.

- RDFs create a new revenue source that helps to subsidise the continued production of the plastics, plastic products and packaging used.

Australia

Australia has shown considerable leadership in classifying Process Engineered Fuel (PEF) as a hazardous waste under the Basel (waste trade) Convention. It is regulated under the Hazardous Waste Act and requires a Hazardous Waste Export Permit, yet bizarrely, the Australian government allows the burning of PEF domestically. This inconsistent approach creates loopholes.

> *"This classification conundrum, where residual waste resources can on the one hand be regarded as a safe, benign fuel source, while at the same time be classified as a hazardous waste export, demonstrates a stark contradiction that is likely to play out in Australia as a major pollution threat, greenwashed as a waste management and Circular Economy good news story."*
>
> -*Refuse Derived Fuel in Australia: Burning Hazardous Plastic Waste. Country status report*

European requirements

The combustion and/or co-combustion of waste including RDF and PEF has to meet a number of consent requirements, including, but not limited to the following ones[2]:

- The maintenance of appropriate process parameters (such as the residence time of the flue gases at a temperature above 850°C for at least 2 s).
- The adaptation of the infrastructure to allow both for a thorough control of the amount of waste combusted, and for an intermediate stop of the waste stream directed to the combustion chamber in case of exceeding the emission standards.

[2] Wasielewski, R., Głód, K., & Lasek, J. (2021). Industrial tests of co-combustion of alternative fuel with hard coal in a stoker boiler. *Journal of the Air & Waste Management Association*, *71*(3), 339–347. https://doi.org/10.1080/10962247.2020.1826007

- Meeting all emission standards. This is related to both tightening emission limits for pollutants, and to the **increasing number** of compounds whose emissions need to be controlled including hydrogen chloride (HCl), hydrogen fluoride (HF), heavy metals, dioxins and furans, dust, nitrogen oxides (NOX) and sulfur dioxide (SO2)
- The emission standards for these compounds are determined using a mixing rule from Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control).
- These standards accord with the NESAQ definition of a high-temperature hazardous waste incinerator, meaning that they are illegal under New Zealand's NESAQ.

Further Reading

International Pollution Elimination Network (IPEN) *Refuse Derived Fuel in Australia: Burning Hazardous Plastic Waste. Country status report*