Waste-to-energy and projects in Latvia

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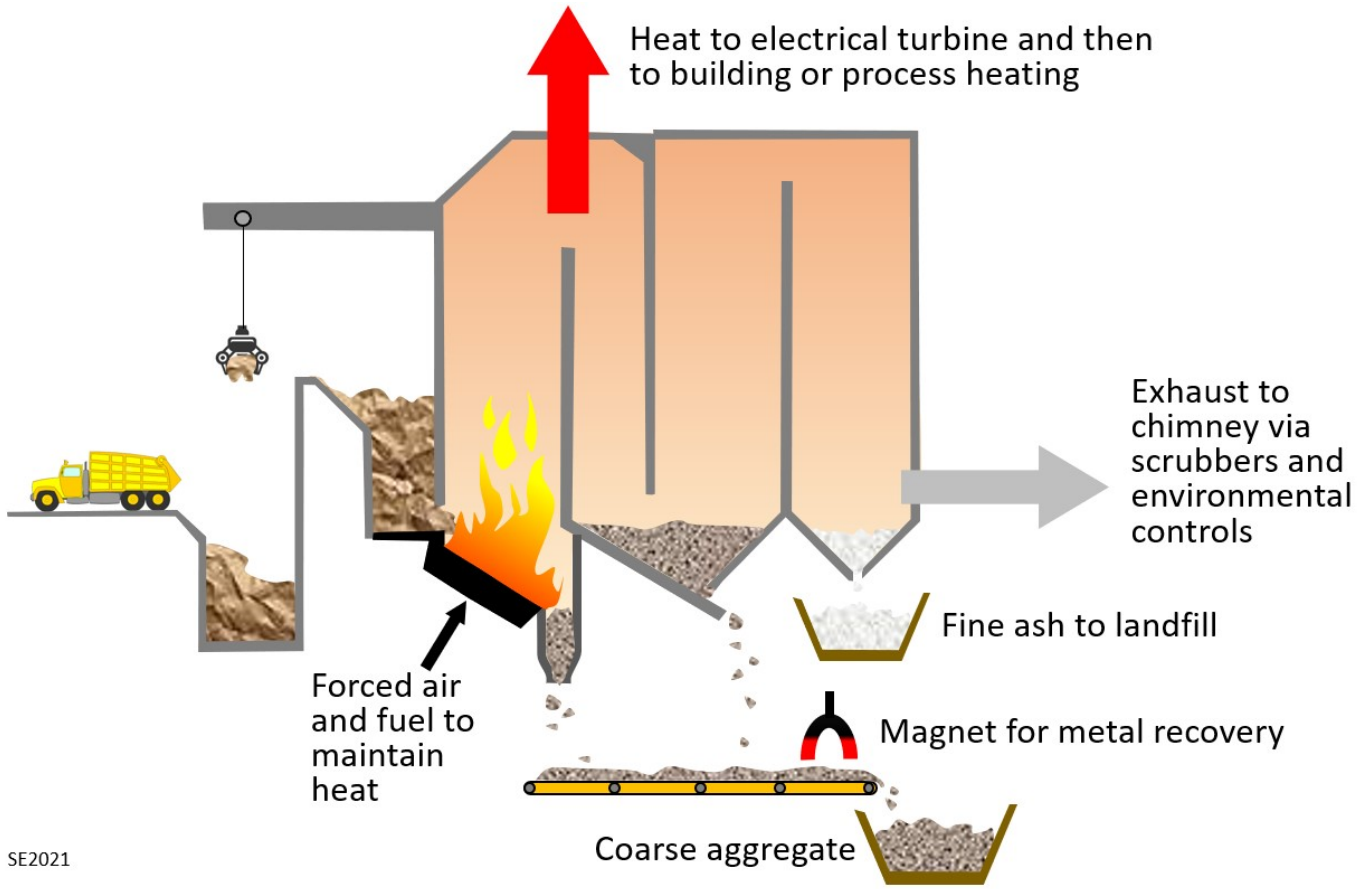
What is ‘waste-to-energy’?

waste treatment technologies that convert **waste** into **energy** by using heat, most commonly **incineration**.

Waste incineration in recovery facilities is a way to reduce the amount of waste deposited in landfills and recover energy from it, YET the use of such facilities in waste management and district heating systems is **controversial** from a sustainability point of view.



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‘Waste-to-energy’

- Diverting waste from landfills to incineration provides an **opportunity to recover energy from non-recyclable waste and reduce landfill methane** emissions, but there is **a risk that incineration may compete with recycling and the transition to a circular economy.**

- Despite strict quality requirements, incineration **still causes pollution both from dangerous ash and air emissions** from the chimney, including greenhouse gases (GHG).

- When using waste-to-energy fuels, which are predominantly produced from fossil raw materials (e.g. various plastics**), such plants can have higher GHG emissions than most other energy sources**

‘Waste-to-energy’

- GHG emissions from this process are **unavoidable.**

- The efficiency of waste incineration depends on the applied technologies and the ability to recover energy. Best-available-technology (BAT) is very expensive and **may not be economically viable**, so a large and stable amount of waste is required to burn waste efficiently.

    - This is a resource that should continue to be supplied even if the amount of waste on a local scale were to be reduced in a targeted manner.

- There can be a big local backlash from the citizens

WtE and it’s role in heating

European Union legislation

- The goal is to **recycle** 55% of generated waste by 2025, & to increase it to **60% by 2030;**
- Ensure **that no more than 10% of generated household waste is deposited** in landfills.
- The European Parliament and the Council agreed to **reduce the amount of packaging waste even more and to eliminate non-recyclable packaging**, which currently accounts for around 13% of the total packaging volume in Latvia.
- WtE is not approved under EU's taxonomy , thus emphasizing **that it does not meet the EU's climate and environmental goals.**

WtE and it’s role in heating

European Union legislation and examples of practice

For states with low or non-existent WtE, EC recommends to:

- **prioritize the development of separate collection schemes and recycling infrastructure**, rather than incineration.
- **landfilling of biodegradable waste urgently needs to be reduced** in order to reduce methane emissions.
- In the EC's view, combined energy recovery and material recycling can be an effective management option if it is carried **out through anaerobic digestion rather than WtE**

According to the Commission: *"when assessing the need for additional processing capacity, member States should take into account:*

• ***the impact of shared collection and recycling targets on the availability of raw materials*** *(waste) to ensure the operation of new incinerators;*

• *available co-combustion capacity in industrial processes such* ***as cement and lime kilns****;*

• *planned or existing capacity in neighboring countries."*

This type of analysis of alternatives has **not been carried out in** Latvia. ➔ Thus, there is a risk that Latvia's need for **regeneration stations is exaggerated**, and Latvia will lose the opportunity to effectively and sustainably improve and transform both waste management and heat supply systems.

WtE and it’s role in heating

Latvia's situation

- Two waste incinerators have been installed in Latvia - one in Ventspils and one in Jelgava (biomass co-generation);
- Waste is used as an alternative fuel in the cement factory;
- **Two WtE plants planned near Riga;**
- WtE Project in Daugavpils have been stopped due to local resistance

Location	Type	Progress	Heat generation for consumption, MW	Capacity, tonnes of waste	Provided citizens	Investments
Ventspils	WtE	Granting of category A pollution permit; The incineration of sorted waste has not yet started	8,5	15 300	Not known	61.23% EU co-financing, 38.77% loans and company funds
Jelgava	Biomass co-generation	Waste as fuel used from the 2025/2026 heating season; The incineration of sorted waste has not yet started	45	30,000 (i.e. 35% of the total fuel)	1600 households	SIA "Gren Latvija" (formerly SIA "Fortum'')
Ropaži	WtE	Completed EIA; The construction of the facility has not yet started	60,4	143 000	100 000 citizens	SIA "Vides Resursu centrs"
Acone	WtE	The project plans have been published, the EIA has not been started; The construction of the facility has not yet started	50-70	150 000 – 200 000	40 000 households	SIA "Gren Latvija" (formerly SIA "Fortum'')
Brocēni	Cement kiln	Operational	n.a.	160,000 – 200,000, of which 40,000 – 50,000 were produced in Latvia	n.a.	EU co-financing, SIA "SCHWENK Latvija"

Risks

Declining financial and political support for regeneration projects

- By the end of 2024, mandatory monitoring of municipal waste incineration emissions will be introduced in the EU emission allowance trading system (ETS). **European Parliament approved the inclusion of the municipal waste incineration sector in the ETS from 2026, setting a price on fossil CO2 emissions from waste incinerators to ensure a level playing field with the ETS systems of countries that already covering this sector (e.g. Sweden, Denmark) and stimulating further decarbonisation**. This means that in the future, the operating expenses of regeneration equipment will increase, which may lead to an increase in heat and electricity prices for municipalities that will use the services of these equipment. For plant operators, such changes can mean financial losses.

Risks

Stagnating waste recycling

- Evidence from other EU countries shows that recycling rates may decrease when waste incinearation becomes operational

- When local governments sign long-term contracts with regeneration stations for intaking waste to incineration and supplying the obtained heat, there are both financial and significant environmental risks, as waste incineration plants must ensure a constant supply of fuel. If the waste is reduced locally through different sufficiency and environmental measures, the municipality may not be able to meet the delivery volumes and may face compensation/fines for breaching the terms of the contract

Risks

Import of waste and excess capacity

- Concern that waste will have to be imported, especially considering the fact that the planned incineration volumes at each station are between 143,000 and 200,000 tons per year.
  - In Lithuania, scandals have appeared in the media about the illegal import of waste from Ireland, brought under the guise of sorting for incineration at SIA "Gren" (formerly "Fortum") stations
  - Illegal import of plastic waste from Poland;
  - Estonia has now become a waste importing country in order to continue operating the Iru cogeneration plant, as domestically produced waste is not enough.
    - *Estonia is currently at risk of EU legal proceedings and fines for not achieving recycling targets, as waste recycling volumes have not improved in the last decade.*
  - Sweden has long-standing problems with excess incineration capacity, forcing the country to import waste from Norway;
  - Waste is imported in Latvia for the cement kiln in Latvia SIA "SCHWENK Latvija", although it would be most beneficial for the company to receive local waste, but currently it is not prepared in a sufficiently high quality.

Risks

Potential environmental pollution and hazardous waste

- Hazardous air pollution, issues with complience with BAT, pollution when stopping and starting operations;
- WtE does not eliminate the need for waste disposal. After incineration of waste, usually 17-30% of the initial amount of waste remains as ash, soot and slag, a significant part of which is also hazardous waste.
    - In Latvia it is not yet clear how to effectively manage these ashes. In Ventspils, the **project promoters admitted that it has not yet been decided how the ash and hazardous slag will be disposed of**. Everyone is relying on transporting the hazardous material to Norway, but there are no guarantees for such a deal and it will increase the price of operations;

A German pilot project using fly ash in road construction is often used as a good example, but it has been shown that hazardous compounds from these roads can enter the environment and cause pollution when they come into contact with water.

Conclusions and recommendations

1. **Support for waste recovery for energy production has significantly decreased** EC prioritizes waste prevention, reuse, separate collection and recycling over incineration or disposal. In the future, addition of WtE to ETS includes a significant increase in costs due to GHG emissions from the waste incineration process. Latvia's position on centralized heat supply does not include waste regeneration as a sustainable form of heat supply.

2**. Waste recovery for energy production should be considered a sustainable solution for district heating**. WtE hinder the achievement of climate neutrality goals, and can also result in air pollution. Incineration of waste does not eliminate the need for disposal. Reducing, sorting and recycling waste significantly reduces potential GHG emissions and the amount of landfilled waste.

Conclusions and recommendations

3. The use of public funds and municipal guarantees for waste incineration projects creates several environmental and financial risks and **should be stopped**;

4. In order to achieve climate goals, **Latvia must significantly increase its waste sorting (especially biological waste) and recycling capacity and introduce sustainable heat supply solutions**;

5. In Latvia, **there is a need for in-depth analysis** of waste streams and a detailed understanding of experiences in neighbouring countries and the potential of local industrial symbiosis.

Zaļā brīvība

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Report of Waste to Energy:

zalabriviba.lv/wp-content/uploads/Krauja_Atkritumu_regeneracija_energijas_ieguvei_2024_fin.pdf

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