

EU Perspective on Waste to Energy



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1. Brief presentation of JASPERS
2. Definition of Waste to Energy (WtE)
3. JASPERS' experience in Waste to Energy (WtE) projects
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- Joint assistance partnership funded by the European Commission (EC) and European Investment Bank (EIB) to support project development and the preparation of EC grant applications
- 120 JASPERS staff located in six European Capitals
- Covered sectors: Waste, Energy, Smart Development, Water & Wastewater, Roads, Rail, Air, Maritime
- Managed by EIB, in coordination with EC and countries through regular tri-partite & annual stakeholder meetings
- Provides on-demand assistance, free of charge, via assignments



Definition of Waste to Energy (WtE)

As per 2017 Communication of the European Commission on the role of WtE in the Circular Economy* : Five categories of processes

- Anaerobic Digestion
- Production of fuel (e.g. Refuse-Derived Fuel/RDF, Solid Recovered Fuel/SRF)
- Co-incineration (e.g. in cement or power plants)
- Incineration
- Other processes (e.g. pyrolysis, gasification, ...)

Waste to Energy (WtE) in the waste hierarchy

Examples of waste-to-energy processes

Anaerobic digestion of organic waste where the digestate is recycled as a fertiliser

Waste incineration and co-incineration operations with a high level of energy recovery
Reprocessing of waste into materials that are to be used as solid, liquid or gaseous fuels

Waste incineration and co-incineration operations with limited energy recovery
Utilisation of captured landfill gas



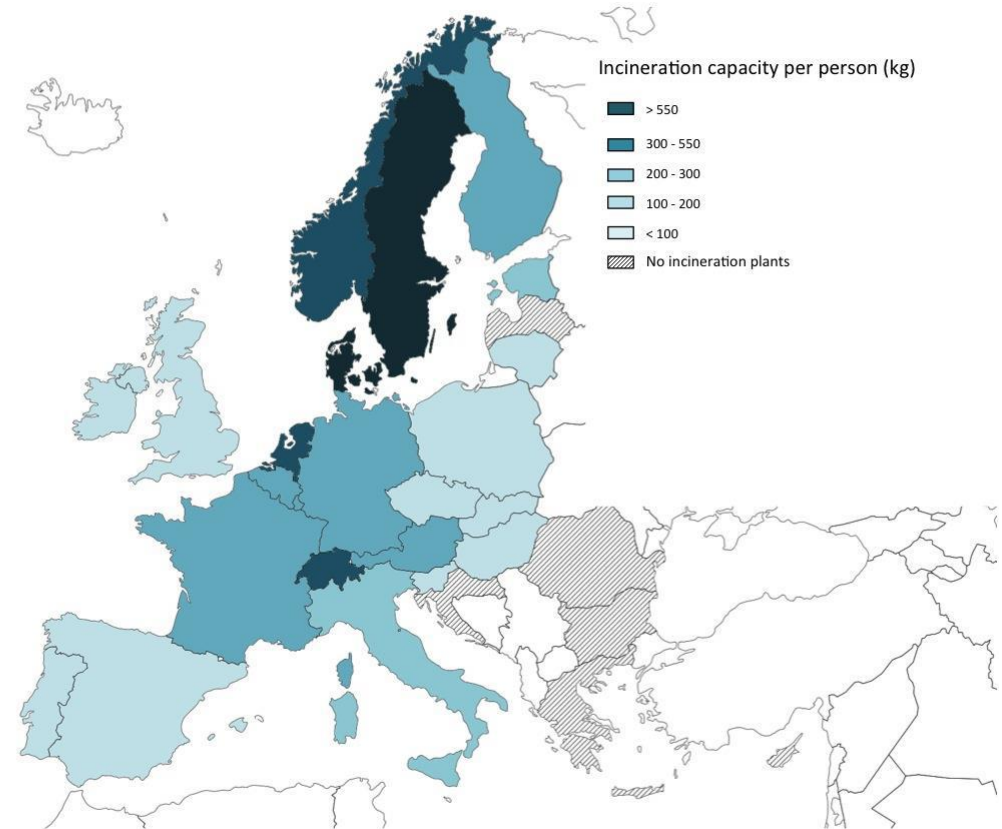
Targets of Circular Economy Package (CEP)

In 2018, the EC published the Circular Economy Package (CEP) with the following targets:

- Waste recycling rates of at least
 - 55% in 2025,
 - 60% in 2030,
 - 65% in 2035.
- Maximum 10% of generated waste to be disposed in landfills as from 2035.

Waste to Energy (WtE) the European context

- Mainly Northern European countries have installed significant WtE capacities, predominantly incineration*
- EC considers priority for new WtE projects to be given to Anaerobic Digestion (due to CE potential)
- WtE plants do not help to meet the recycling targets (except Anaerobic Digestion to a certain extent if well operated)
- WtE plants may play a role with view to the maximum 10% landfilling target for volume reduction with energy as by-product



* Assessment of waste incineration capacity and waste shipments in Europe, WI et al, 2016.
European Topic Centre on Waste and Materials in a Green Economy (ETC/WMGE), 2017.

Since 2007, JASPERS provided support for the preparation of more than a dozen projects in Poland, Lithuania, Bulgaria, Czech Republic, Portugal and France

Outlook:

- There is no “one fits all” solution to integrated solid waste management across EU, due to different national /regional parameters, starting from different national and rural / urban waste compositions
- WtE may play a role – for volume reduction with energy production as by-product - to reach the max 10% landfill target as of 2035 as per the Circular Economy Package (CEP) - when well justified and alternatives exhausted
- The minimum 65% recycling target as per CEP for 2035 implies a maximum WtE capacity of 35% of generated waste - or lower when higher recycling rates / options
- JASPERS is ready to support assessments and projects for integrated waste management as per CEP

EIB lending to integrated solid waste management projects and WtE plants

- Waste incineration is considered as volume reduction with energy as a by-product, only viable with very high level of utilisation of electric and thermal power
- As of 2022, EIB set a new *Emissions Performance Standard* (EPS) of maximum 250g of CO₂ per Kilowatt-hour (kWh) – can typically not be reached with electric power production only, but also requires efficient use of thermal energy (e.g. district heating, industrial use, etc. - case-by-case assessment)
- In case of need of EIB lending : contact EIB early in project preparation phase (e.g. via JASPERS team)

- **Climate Energy and Environment Guidelines (CEEAG):**
- Aid for resource efficiency and for supporting the transition towards a circular economy
 - Aid amount: Funding Gap & Ex post monitoring & Claw-back mechanism
 - Prerequisite: Going above EU Standards!
- **GBER** (under revision) : 35% & Bonuses
 - Max. aid: 15 mio Euro
 - Prerequisite: Going beyond state of the art!
- **SGEI Route:** 100% of Funding Gap.
 - Prerequisite: Regular checks to avoid overcompensation!
- What if WtE? ~~SGEI Route?~~



Can we use State aid to finance WtE?

- Climate Energy and Environment Guidelines:
- WtE can be supported for CO2 emission reductions:
 - Either for the biomass/RES content of the waste ($\approx 51\%$)
 - Or if waste is incinerated in High Efficient CHP's (Combined Heat and Power generation).
- Bidding process!
- Feed in tariffs/premiums for Electricity
- Heat consumers? (District Heating, Industrial processes)

Thank you for your attention!

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