EUROPEAN SUPPLIERS OF WASTE TO ENERGY TECHNOLOGY

Brussels, 29 September 2025

ESWET response to EFRAG's consultation on the amended ESRS exposure drafts

ESWET – the European Suppliers of Waste-to-Energy Technology represents companies that have built and supplied over 95% of the Waste-to-Energy plants in operation in Europe. It seeks to promote the technologies which recover both energy and materials from non-recyclable waste that would otherwise end up in landfills.

With the present response, ESWET would like to express its concern about the **amended European Sustainability Reporting Standards (ESRS) exposure drafts** proposing to exclude energy recovery from the definition of "recovery," thus classifying waste incineration with energy recovery as a disposal operation. This marks a departure from long-established EU waste hierarchy principles and creates a regulatory inconsistency with the Waste Framework Directive. It also risks undermining both the credibility of circularity indicators and the real-world achievement of climate and waste policy objectives.

This paper outlines the implications of the ESRS reclassification and argues for a conditional reintegration of Waste-to-Energy (WtE) within the ESRS definition of recovery, aligned with EU law and environmental ambition.

1) Policy inconsistency and legal misalignment

The ESRS exclusion of energy recovery contradicts the Waste Framework Directive (2008/98/EC), which ranks WtE above landfill and explicitly defines it as a form of recovery (R1 operation). The vast majority of waste incineration plants in the EU qualify under this classification, achieving energy efficiency thresholds defined in EU law.

The proposed ESRS language would create a two-speed legal system: one in which WtE is treated as recovery under environmental and waste law, but as "disposal" under sustainability reporting. This legal inconsistency could undermine investor confidence, obstruct the implementation of national waste strategies, and introduce confusion in corporate disclosures.

2) Waste-to-Energy is part of the circular economy

Waste-to-Energy plays a crucial, often underestimated, role in supporting the circular economy by managing residual waste that cannot be prevented, reused, or recycled. While the waste hierarchy prioritises prevention and recycling, WtE provides an essential, sanitary, and climate-friendly solution for the non-recyclable fraction, preventing it from being landfilled and thus avoiding methane emissions. Beyond simply treating waste, modern WtE facilities are increasingly integrated into circular systems: they recover energy (electricity and heat) that displaces fossil fuels, and their residues (bottom and fly ash) can be processed to recover valuable materials, such as metals and minerals, which are then fed back into industrial supply chains.

Importantly, WtE also contributes to pollution prevention and public health protection: high-temperature, well-controlled combustion ensures the destruction of pathogens and most hazardous organic compounds (including many persistent pollutants), safely treats contaminated and sanitary wastes that cannot enter recycling streams, and significantly reduces risks linked to leachate, odours, and uncontrolled emissions associated with landfilling or illegal dumping. By reliably treating contaminated rejects from sorting and recycling (composite materials, healthcare waste, and other non-recyclables), WtE stabilises the overall waste system, enabling higher-quality recycling and closing resource loops without compromising environmental integrity.

This dual function — treating residuals while recovering energy and materials — positions WtE as a **crucial link in the circular economy, ensuring that even the most challenging waste streams contribute to resource efficiency and decarbonisation goals**.

European WtE plants provide a local source of reliable, baseload energy that complements intermittent renewable energy sources such as wind or solar while at the same time treating non-recyclable waste. Waste-to-Energy is provided 24/7 and is thus plannable, increasing the electricity generation flexibility of the entire electric grid. In 2019, in Europe, WtE generated 43 billion kWh of electricity and 99 billion kWh of heat, which provided 20 million citizens with electricity and 17 million citizens with heat.[1] In fact, around 10% of Europe's energy provided to District Heating networks comes from WtE. In cities with good district heating infrastructure, such as Brescia, Malmö or Klaipėda, WtE covers more than 50% of the heating needs.

[1] Confederation of European Waste-to-Energy Plants (CEWEP) (2022).*Waste-to-energy Climate Roadmap: The path to carbon negative.* Düsseldorf: CEWEP. https://www.cewep.eu/wp-content/uploads/2022/06/CEWEP-WtE-Climate-Roadmap-2022.pdf.pdf

Since the waste treated in WtE plants is mixed, with a majority of biogenic (i.e., biomass) content, over 50% of the energy produced is considered renewable[2]. This renewable feature of WtE is recognised in the Renewable Energy Directive (RED III). In addition, according to the IPCC guidelines[3], biogenic CO_2 is considered carbon neutral and is therefore excluded from greenhouse gas accounting. Consequently, as is standard practice in Life Cycle Assessment (LCA) modelling[4], WtE's climate impact is equal to zero (for the analysis further below in the position paper). This makes WtE a reliable, local, and partly renewable energy source that helps replace fossil fuels in electricity, district heating, industrial steam, and transport sectors. In this context, WtE acts as a link between the circular economy and renewable energy.

WtE's role in the circular economy was already acknowledged by the European Commission in 2017[5], while the United Nations Economic Commission for Europe (UNECE) has identified WtE as the most sustainable option for managing non-recyclable waste, as it enables both energy and material recovery while offering a cleaner alternative to landfill disposal and waste exports.[6]

3) Climate impact and methane avoidance

The climate value of WtE arises from its ability to avoid methane emissions from landfilling, generate low-carbon energy that substitutes fossil-based energy sources, and recover materials.

According to CEWEP[7], the diversion of non-recyclable waste from landfills to WtE results in **avoiding the emission of more than 600 kg of CO_2 per tonne of waste treated** in a 100-year time perspective. In other words, WtE plants prevent the formation of landfill gas by treating the organic methane-producing compounds

[2] Giouse, F., Ravache, E. & Moutte, L. (2020). *Determination of the biogenic and fossil contents of residual household waste and a SRF.* [in French] https://librairie.ademe.fr/energies/4007-4593-determination-des-contenus-biogene-et-fossile-des-ordures-menageres-residuelles-et-d-un-csr.html

[3] Intergovernmental Panel on Climate Change (IPCC) 2006. *Guidelines for National Greenhouse Gas Inventories*. At: https://www.ipcc-nggip.iges.or.jp/public/2006gl/

[4] Astrup, T., Møller, J., & Fruergaard, T. (2009). Incineration and co-combustion of waste: accounting of greenhouse gases and global warming contributions. *Waste management & research : the journal of the International Solid Wastes and Public Cleansing Association, ISWA*, *27*(8), 789–799.

[5] European Commission (2017). The role of waste-to-energy in the circular economy. At: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017DC0034&from=en

[6] United National Economic Commission for Europe (UNECE) (2022). . Guidelines on Public-Private Partnerships for the Sustainable Development Goals in Waste-to-Energy Projects for Non-Recyclable Waste: Pathways towards a Circular Economy. At: https://unece.org/sites/default/files/2022-10/ECE_CECI_WP_PPP_2022_03-en.pdf

[7] Confederation of European Waste-to-Energy Plants (CEWEP) (2022). *Waste-to-Energy Climate Roadmap Technical Annex (TA) main assumptions & methodology.,* Düsseldorf: CEWEP.

in MSW, therefore decreasing their net emissions. Additionally, the energy recovered by WtE plants can displace energy from fossil fuel sources, **helping abate GHG emissions, at an estimated 360 kg of CO_2 equivalent per tonne of waste treated**, while for **material recovery, the abated emissions are 60 kg CO_2 equivalent** per tonne of waste treated. Overall, WtE plants generate emissions of about 400-450 kg of fossil CO_2 per tonne processed by delivering a public service of general interest and providing a treatment option for residual waste, but above all, **WtE plants help prevent CO_2 emissions with avoided emissions amounting to more than 1000 kg CO_2 per tonne of waste treated.**

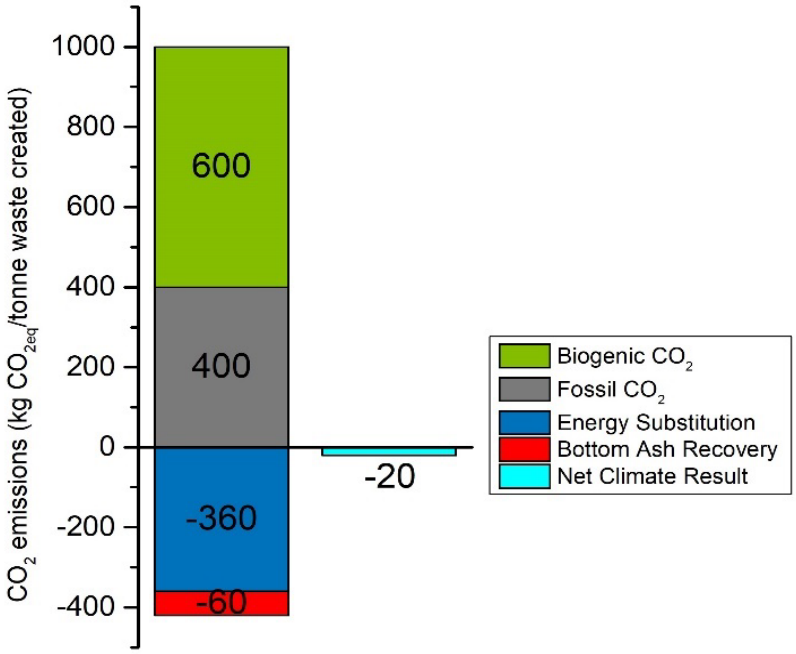

Figure 1. *Net climate effect of treating one tonne of residual waste via Waste-to-Energy (WtE). Data source: CEWEP Climate Roadmap, 2022. Graphic source: ESWET.*

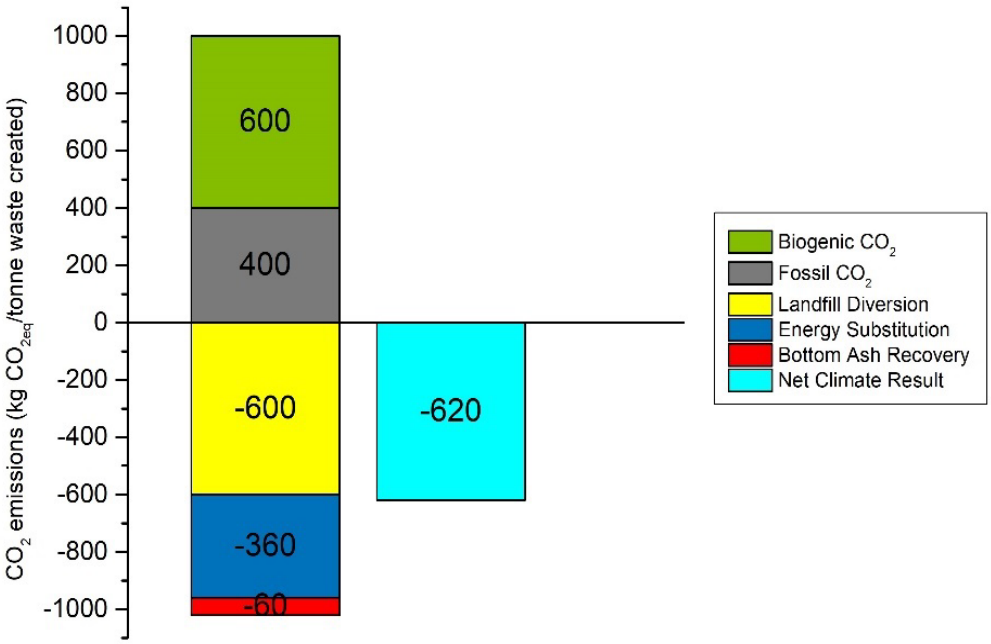

Figure 2. *Net climate effect of treating one tonne of residual waste via WtE, taking into consideration also landfill diversion. Data source: CEWEP Climate Roadmap, 2022. Graphic source: ESWET.*

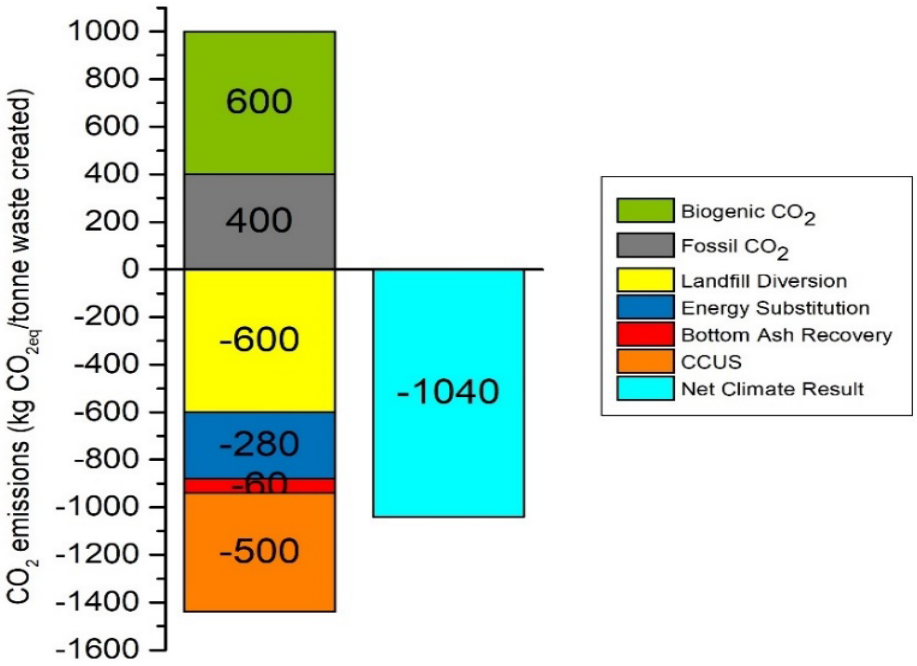

Figure 3. *Net climate effect of treating one tonne of residual waste via WtE, taking into consideration also landfill diversion and CCUS. Data source: CEWEP Climate Roadmap, 2022. Graphic source: ESWET.*

The 3 figures above highlight the significant climate mitigation potential of WtE, which is highly relevant in the context of climate targets and broader decarbonisation efforts. The primary mission of the WtE sector is to safely treat society's residual, non-recyclable waste; unlike other industrial sectors, WtE cannot "switch fuels" (*NB: waste is not a fuel*) or control the composition of its input, as it is determined by upstream consumption and product design. Despite this, WtE delivers substantial greenhouse gas reductions by diverting waste from landfills, preventing methane emissions, recovering energy that substitutes fossil fuels, and enabling material recovery from incineration bottom and fly ashes. This means that, when considering the full system benefits, the sector is already close to climate neutrality or even net negative in terms of emissions.

The Intergovernmental Panel on Climate Change (IPCC) explicitly acknowledges WtE's climate mitigation role, stating that **"When WtE technologies are equipped with proper air pollution reduction facilities, they can contribute to clean electricity production and reduction of GHG emissions"**.[8] Furthermore, The United Nations Economic Commission for Europe has defined WtE as **"the most sustainable solution for non-recyclable waste as it recovers energy and materials while providing an alternative to highly polluting landfills"**.[9]

4) Risk of regressive outcomes

If WtE is excluded from recovery operations in reporting, the following negative consequences can be expected:

- Circularity metrics will penalise Member States that have invested in WtE to meet landfill diversion targets;
- Waste exports and illegal dumping may rise to avoid reputational or reporting penalties;
- Investment in WtE decarbonisation may stall due to unfavourable categorisation.

[8] Intergovernmental Panel on Climate Change (IPCC) (2022). Climate Change 2022 Mitigation of Climate Change. Working Group III Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change 2022. At https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_FullReport.pdf

[9] United National Economic Commission for Europe (UNECE) (2022). Guidelines on Public-Private Partnerships for the Sustainable Development Goals in Waste-to-Energy Projects for Non-Recyclable Waste: Pathways towards a Circular Economy. At: https://unece.org/sites/default/files/2022-10/ECE_CECI_WP_PPP_2022_03-en.pdf

5) Policy recommendation

ESWET calls on the European Commission and EFRAG to amend the ESRS definition of recovery to include waste incineration with energy recovery, to preserve the waste hierarchy, uphold reporting integrity, and incentivise investments in clean residual treatment solutions.

6) Conclusion

For ESRS to be coherent, credible, and conducive to circular and climate goals, it must reflect the realities of waste system functioning. That includes recognising Waste-to-Energy not as an obstacle to circularity, but as a vital enabling infrastructure when used appropriately. The Commission has an opportunity to correct this definitional imbalance and ensure that ESRS supports — rather than undermines — the EU's waste, climate, and industrial policy frameworks.

ESWET – European Suppliers of Waste-to-Energy Technology
Transparency Register #56047551356-84
Avenue Adolphe Lacomblé 59, B-1030 Brussels
www.eswet.eu