



EUROPEAN SUPPLIERS
OF WASTE-TO-ENERGY
TECHNOLOGY

ESWET reply to the EC consultation on the proposed revision of the Implementing Regulation on the monitoring and reporting of greenhouse gas emissions





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ESWET REPLY TO THE EC CONSULTATION ON THE PROPOSED REVISION OF THE IMPLEMENTING REGULATION ON THE MONITORING AND REPORTING OF GREENHOUSE GAS EMISSIONS

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ESWET – the European Suppliers of Waste to Energy Technology – represents companies that have built and supplied over 95% of the Waste-to-Energy (waste incineration with energy recovery, in short: WtE) plants in operation in Europe. It seeks to promote the technology that, within the frame of the Waste Hierarchy, recovers energy from waste that would otherwise end up in landfills.

ESWET welcomes the European Commission’s proposal to revise the rules for the monitoring and reporting of greenhouse gas emissions (Implementing Regulation (EU) 2018/2066) following the recent revision of the EU ETS (Directive 2003/87/EC), to also cover the waste incineration sector and its particularities.

KEY POINTS FOR ESWET:

- 1. The revised monitoring and reporting rules (MRR) should recognise the unique feature of the heterogeneous feedstock of WtE plants, which treat mixed waste.**
- 2. The revised MRR properly acknowledge both calculation-based and measurement-based methodologies, however, with regards to (mixed) waste, ESWET is concerned that the rules require plants to meet very strict uncertainties’ thresholds, for both types of methodologies. In this case, derogations are a must. ESWET members already supply instruments and solutions for CO2 accounting, but there are still limitations that need to be considered in the new MRR rules.**
- 3. As a way forward, the MRR should allow for flexibility and time for WtE plants to evaluate the situation, and should soon be open again for re-assessment to check whether the uncertainties’ levels are fit for the sector.**

In particular:

1) The important thing to consider when it comes to monitoring, reporting, and verification (MRV) rules with regard to waste incineration, is that these have to be designed in such a way that truly corresponds to the sector, which has the unique feature of having a mixed feedstock.

In general, monitoring and reporting of the CO₂ fossil fraction in heterogeneous waste is very complex and uncertain, and it can also be very expensive. At the same time, WtE facilities cannot rely on established CO₂ emission factors the same way as conventional power plants, exactly because of this heterogeneous waste input.

In any case, plant-specific activity data are estimated to have considerably less uncertainty compared to default values for emission factors.¹

Another aspect that needs to be considered in the discussion regarding monitoring of WtE emissions is the question of periodic measurement compared to continuous sampling. The nature of the waste feedstock will be changing a lot in the coming years, since, on the one hand, the biogenic fraction of the waste might decrease as recycling will be increasing, but on the other hand, more biogenic waste will be produced compared to plastic, due to new environmental requirements for products and packaging. These elements add more uncertainty to the whole topic.

2) Current Art. 21 of the MRR provides that operators shall apply either a calculation-based methodology or a measurement-based methodology to monitor the emissions of their plant. **ESWET is content to see that the draft revised MRR retains this flexibility for waste incineration plants.** However, there are still several aspects to be considered in more detail.

To start with, in order to measure the amount of biogenic CO₂ emissions, you need to measure first the amount of total CO₂ emissions. The considerations vary depending on which of the two sums (total vs. biogenic only) you are looking to monitor and with which methodology.

Regarding emission factors:

Since mixed waste is very heterogeneous, WtE plants cannot always safely rely on emission factors, as previously explained. In principle, an emissions factor should be tailored to be as close as possible to actual emissions to best reflect the biogenic content of waste going into WtE. In addition, an emissions factor approach requires data to be updated regularly and based at a regional level rather than a national one, as the waste composition can vary a lot.

In Germany, the Fuel Emission Trading Act² will start being applied to WtE plants in 2024. The follow-up Ordinance on monitoring and reporting of emissions according to the Fuel Emissions Trading Act for the years 2023 to 2030 (Emissions Reporting Ordinance 2030 - EBeV 2030) includes a list of different waste keys as well as a lot of different emission factors³, including for the total CO₂ and for the biogenic CO₂. At the

¹ 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Volume 5 Waste. Available at: https://www.ipcc.ch/site/assets/uploads/2018/03/5_Waste-1.pdf

² https://www.bmuv.de/fileadmin/Daten_BMU/Download_PDF/Gesetze/behg_en_bf.pdf and https://www.dehst.de/EN/national-emissions-trading/participating-in-national-emissions-trading/scope-and-emission-determination-2023-2030/scope-and-emission-determination-2023-2030_node.html

³ https://www.gesetze-im-internet.de/ebev_2030/

same time, **the new German rules allow for higher uncertainties than the EU ETS, which is a step in the right direction: the current rules and thresholds in the EU ETS (i.e., the MRR) have not been properly developed for the WtE sector.**

Moreover, the proposed emission factor of 91.7 tCO₂/TJ (adopted from the 2006 IPCC guidelines) in Annex VI, Section 1, Table 1, raises many concerns: although the new entry “Municipal Waste” specifies the wording “(non-biomass fraction)” (i.e., the fossil fraction), the emission factor seems to be referred to the total amount of incinerated waste, since it is expressed on an energy basis as tCO₂/TJ. This described entry creates ambiguity for its interpretation and will undoubtedly lead to the risk of over-estimating fossil CO₂ emissions, resulting in almost double the actual amount of emissions from a conventional WtE plant. It should be specified (e.g., with a footnote) that this emission factor represents only the fossil CO₂ emissions resulting from the fossil fraction of the treated waste. Perhaps, using a Net Calorific Value (NCV) for this entry (there is none currently - “not available”) could shift any ambiguity concerning the application of the emission factor. **Therefore, ESWET asks the Commission to clarify this point and revise the MRR proposal accordingly.**

Regarding the measurement of the total amount of CO₂ emissions:

Every WtE plant is already equipped with an instrument (FTIR) that measures the total amount of CO₂: they measure the concentration of CO₂ and the flow rate in terms of the volume, and then they can draw up an estimation of the total amount of CO₂ (i.e., the mass flow). The problem remains that the level of uncertainty is quite big even for the mass flow calculation at the stack.

According to the category of the installation, the EU ETS provides a level of uncertainty that needs to be respected. To our knowledge, from the experience of Swedish operators, the uncertainties required for large plants are not possible to be met. What is more, in general, the regular volume (mass) flow measurement is around +/- 10%, which would mean that with the methodologies and instruments currently in place it seems that it would be very difficult for most – if not all – WtE plants to meet even the higher benchmarks of uncertainties provided in the MRR.

The issue is that in both cases of calculation-based and measurement-based methodologies, the tiers and uncertainty levels proposed for WtE plants have been set on the same values as for standard combustion plants. However, as we highlighted before, **the values of the tiers should not be the same for WtE plants, as their feedstock is very heterogeneous.**

Regarding the measurement of biogenic CO₂ emissions:

In principle, the **measurement of biogenic emissions through radiocarbon (¹⁴C) testing** is the most accurate method to account for the share of biogenic emissions. There are instruments that determine the biogenic fraction with very good results in terms of meeting the MRR uncertainty levels.

The ¹⁴C measurement methodology has been recently used for a major study in France (conducted by ADEME in 2018⁴), involving sampling from WtE plants that

⁴ CABINET MERLIN, Détermination Des Contenus Biogène Et Fossile Des Ordures Ménagères Résiduelles Et D'un Csr, A Partir D'une Analyse ¹⁴c Du Co₂ Des Gaz De Post-Combustion. ADEME, 2020 Available at: <https://bibliothèque.ademe.fr/energies-renouvelables-reseaux-et-stockage/4007-determination-des-contenus-biogene-et-fossile-des-ordures-menageres-residuelles-et-d-un-csr-a-partir-d-une-analyse-14c-du-co2-des-gaz-de-post-combustion.html>

participated in the study. This study concluded that the plants reached overall 58% of biogenic emissions to 42% of fossil CO₂ emissions in those plants. Pursuant to this study, France currently applies this quota as an emission factor for WtE plants, and WtE plants are not obliged to individually monitor and report CO₂ emissions for the time being.

Measurement of biogenic emissions through ¹⁴C testing requires laboratory analysis: Today, there are only a few laboratories providing this analysis that are also certified with EN ISO 13833, but the number is expected to grow fast and soon. Until this happens, the process seems to be expensive with long turnaround times for the sampling. The EU needs to support the creation of more certified laboratories so that the overall process is not slow and burdensome for the operators to individually check the content of emissions.

Derogations are needed:

The MRR currently provides an exemption to the established accuracies, allowing for a higher level of uncertainties if a plant can demonstrate that it is technically unfeasible or that this type of measurement will bring it to an unreasonable cost.

For these reasons, **ESWET deems rightful that the revised MRR is upholding the derogation** according to which the operator can submit an alternative estimation method to determine the biomass fraction to the competent authority for approval when carrying out the prescribed analyses subject to the tier level required is **technically not feasible or would incur unreasonable costs**. However, the thresholds for the unreasonable costs **should not be unjustifiably and disproportionately increased** in the current amendment of the MRR, under the revised article 18.

3) The European Commission must consider the above-mentioned limitations in the new MRV rules. The European WtE plants will need time to adapt to the new requirements and to evaluate all methodologies and the related obligations. Many projects are currently taking place to compare the different methodologies, and it seems logical that all options are open to them.

Even though there are monitoring instruments that meet the accuracy thresholds for biogenic emissions, there are still difficulties with meeting the accuracy thresholds for the total CO₂ emissions, and with meeting the accuracy thresholds for using a calculation-based methodology. In addition, even if all the needed monitoring equipment was available on the market, it would still be very hard to equip all European WtE with such instruments by the time the MRR comes into effect.

Overall, it is vital that the MRR establish a flexible approach, allowing operators to choose the method that works best for them. The proper way forward would be for the new MRR recognise that – at least for the time being – the WtE plants will need higher thresholds for uncertainties compared to the ones prescribed today.

The whole process of setting up rules for the monitoring and reporting of CO₂ emissions from WtE plants is not an activity only for today. It will take years and many trials with different approaches as well as a collection of a significant amount of data. The new MRR should emanate this flexibility.



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ESWET is a European association representing the European suppliers of Waste-to-Energy technologies, committed to fostering the development and dissemination of Waste-to-Energy at the European level. ESWET also seeks to raise awareness of the positive implications of the technology in terms of better waste management, energy, and the environment.

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