

# ESWET reply to the European Commission consultation on the proposed Delegated Act & Annex on GHG savings of low carbon fuels

**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, or WtE) plants in operation in Europe.

The association seeks to promote the technology which, within the framework of the Waste Hierarchy, recovers energy from waste that would otherwise end up in landfills.

*Background photo: Press/CopenHill*

**ESWET welcomes the opportunity to provide feedback to the European Commission on the proposed Delegated Act (DA) and Annex concerning greenhouse gas (GHG) emission savings for low carbon fuels. However, we are concerned that certain elements of the Act and Annex may overlook valuable low carbon energy sources, such as hydrogen produced from WtE processes and fuels derived from non-recyclable waste. This could hinder their development and integration, limiting the potential growth of these technologies from the start.**

**ESWET's main points of concern:**

- 1) Prioritising Carbon Capture and Utilisation (CCU) for fuel production from Waste-to-Energy (WtE) can often be a more practical solution for emissions reduction compared to Carbon Capture and Storage (CCS), thus the legislation should enable CCU from WtE
- 2) Clarification needed on inclusion of biogenic CO<sub>2</sub> from waste incineration under point 10(c)
- 3) Clarification needed on GHG calculation methodology and waste feedstock in low carbon fuel production
- 4) The sunset clause in point 10(a) of the Annex on deducting captured fossil carbon is very restrictive for hard-to-abate sectors like WtE
- 5) Point 10 (f) of the Annex should be interpreted in a way that includes captured fossil emissions from WtE facilities as eligible for emissions deduction
- 6) Clarity and consistency in EU legislation are imperative
- 7) E ex-use should consider explicitly landfill diversion, including that of plastic waste
- 8) Emissions from processing (e p) should consider unavoidable emissions from non-recyclable plastic waste in WtE plants

## Analytically:

**1) Prioritising CCU for fuel production from Waste-to-Energy can often be a more practical solution for emissions reduction compared to CCS, thus the legislation should enable CCU from WtE.**

What is more, CCS is often seen as a viable solution for WtE plants to reduce emissions by capturing and storing CO<sub>2</sub>. However, it is crucial to specifically recognise and prioritise CCU for fuel production, especially in the context of WtE facilities, as a complementary and sometimes more practical approach.

Coupling CCU with WtE is particularly important because WtE plants not only manage and treat waste – addressing a critical societal need – but also operate in a sector that is inherently hard to decarbonise. Enabling these plants to convert captured CO<sub>2</sub> into renewable synthetic fuels, such as e-methanol or e-kerosene, offers a practical pathway to repurpose emissions, turning waste into a valuable energy resource. This approach is especially relevant when CCS is not feasible due to factors such as high costs, unsuitable locations, lack of access to storage hubs, limited space, or infrastructural challenges.

By allowing and fostering CCU for fuel production from WtE processes, policymakers can provide a flexible and efficient solution that maximises the utility of existing waste streams while contributing to energy transition goals. Legislation should therefore focus on opening doors rather than imposing restrictive measures that could hinder the development of CCU in WtE.

**2) Clarification needed on inclusion of biogenic CO<sub>2</sub> from waste incineration under point 10(c).**

The proposed DA and its Annex follow exactly the paradigm set by the delegated acts to the Renewable Energy Directive (REDII) on Renewable Fuels of Non-Biological Origin (RFNBOs) and Recycled Carbon Fuels (RCFs), adopted in 2023. In the same line, the present draft DA is also very complicated and unclear with regards to waste as a feedstock for the production of hydrogen and other low carbon fuels, and especially CO<sub>2</sub> from WtE plants.

The methodology for calculating GHG emissions savings of low carbon fuels should be carefully tailored to account for the unique characteristics of mixed, non-recyclable waste as a feedstock. It should adopt a life cycle assessment (LCA) approach for fuels derived from waste management processes, ensuring that it supports the development of technologies focused on residual waste treatment while contributing to the diversification of the energy mix, rather than discouraging them.

In addition, we ask the Commission to consider the overall wording of this DA and similar acts, which require clarifications to avoid misinterpretations at the stage of projects. Ambiguous provisions could be a big risk for actual project development.

### **3) Clarification needed on GHG calculation methodology and waste feedstock in low carbon fuel production.**

With regards to point 10(c) of the Annex, it is stated that to qualify as an emission reduction or avoided emission (e ex-use), the CO<sub>2</sub> would have to originate from “biofuels, bioliquids or biomass fuels”. While it is implied, it is essential to explicitly clarify that captured carbon from biomass (such as the biogenic fraction of waste in WtE plants) falls under point ‘c’.

This is already answered in the Q&A published by the European Commission’s DG Energy question and answer Number 37, whereby “biogenic CO<sub>2</sub> including the biogenic share of CO<sub>2</sub> arising due to the incineration of municipal waste constitutes an eligible carbon source provided the sustainability and greenhouse gas saving criteria are met”. We ask the Commission to explicitly clarify this in the wording of the Annex.

Furthermore, we request that the Commission explicitly clarify in the Annex what has already been addressed in the aforementioned Q&A under Question 38. The Q&A states: “In case of a CO<sub>2</sub> stream including both fossil-based and biogenic CO<sub>2</sub>, the rules of the mass balance system should be applied. Accordingly, it is possible to consider all CO<sub>2</sub> taken from the stream as biogenic, provided the amount of biogenic CO<sub>2</sub> taken from the stream does not exceed the amount of biogenic CO<sub>2</sub> present in the mixture.” Such explicit confirmation of this principle in the Annex is crucial to prevent varying interpretations and to reduce uncertainty in the development and launch of projects.

### **4) The sunset clause in point 10(a) of the Annex on deducting captured fossil carbon is very restrictive for hard-to-abate sectors like WtE.**

As per the DA on RFNBOs and RCFs, point 10(a) of the Annex of this draft act **sets a sunset clause for captured fossil CO<sub>2</sub> to be used in fuel production**. Regardless of whether the deadline is set for 2036 or extended to 2041, this timeframe is extremely restrictive.

Setting such arbitrary limits without consideration of the typical payback period for installations is concerning. This would make it unreasonable for any low carbon point source to invest in a plant, which probably would not be able to produce these fuels for more than a decade.

In other words, this timeline may not allow for sufficient return on investment for projects, discouraging investment in low carbon fuel infrastructure. We request therefore to remove this deadline, or to extend it to a reasonable amount of time when the fuel is produced from waste management processes and not from manufacturing or energy production sources, which can change their feedstock from fossil-based to renewable.

Looking at waste incineration, there will always be non-recyclable waste requiring treatment, and some fraction of it will be of fossil origin (i.e., plastics). Even with the best separate collection and sorting technologies in place, mixed waste will always embed some fossil fractions. To address the resulting CO<sub>2</sub> emissions, integrating carbon capture technology into plants (where feasible and financially supported) would be ideal, moving towards net neutral or net negative emissions.

Since storing captured carbon may not always be viable, utilising fossil carbon for fuel production is a valid option. This approach should be supported without imposing sunset clauses, given that the WtE cannot simply switch fuel (i.e., it is bound to treat non-recyclable waste).

Given how restrictive the framework under point 10(a) is for carbon emissions from waste inputs, we interpret that the intention of the legislator is to cover the WtE sector under point 10(f), as follows just below.

**5) Point 10 (f) of the Annex should be interpreted in a way that includes captured fossil emissions from WtE facilities as eligible for emissions deduction.**

Captured fossil emissions from waste inputs, specifically in the context of WtE processes, should be interpreted under point (f) rather than point (a) of this provision.

Point (f) states that “the carbon stems from inputs qualifying as a carbon source for the production of recycled carbon fuels.” The emissions captured during the process of WtE stem from non-recyclable, fossil-based waste that is also the carbon source for RCFs, hence these emissions fall under the scope of and intent behind point (f).

Waste incineration deals with non-renewable waste streams (e.g., plastics) that cannot be recycled. The carbon emissions resulting from this process are an unavoidable and unintentional consequence of the waste management process, which mirrors the language used in the definition of RCFs.

This suggests that the legislator acknowledges this and allows such emissions to be used as a valid carbon source under point (f) when captured for fuel production.

In contrast to point (a), point (f) offers a more flexible option by recognising the unique nature of carbon emissions from waste inputs and allowing these emissions to be captured and repurposed, rather than requiring integration into a strict carbon pricing or trading system, with a sunset clause on top.

To our understanding, the inclusion of point (f) suggests that the legislator intends to provide an alternative pathway for emissions associated with hard-to-abate sectors like waste management and WtE. By acknowledging that certain fossil carbon sources (e.g., those from waste incineration) qualify for emission deductions when utilised as a carbon source for fuel production, point (f) creates room for WtE facilities to participate in the low carbon fuel market without being restricted by the limitations of point (a).

This interpretation of point (f) recognises the unavoidable nature of emissions from non-recyclable waste streams and the essential role of WtE in managing such waste. By allowing WtE emissions to be accounted for under point (f), the legislation supports a practical pathway for these facilities to contribute to low carbon fuel production, enhancing their GHG savings potential. This approach aligns with the broader goals of reducing emissions in hard-to-abate sectors and promoting circular economy practices.

We ask the European Commission to confirm that fossil carbon emissions captured from WtE processes can fall under point (f), ensuring flexibility and inclusivity in the low carbon fuel framework and allowing WtE facilities to optimise their role in emission reduction strategies.

## **6) Clarity and consistency in EU legislation are imperative.**

We ask for **clarity and consistency** in how various pieces of EU legislation are covering waste as feedstock for the production of hydrogen and fuels, be it renewable or low carbon. This is needed not only in the framework of the Renewable Energy and Gas Directives, but also under the EU Emissions Trading Directive (e.g., with regards to counting avoided emissions), and also in the EU Taxonomy.

In particular, we ask that **point 10(f) and e CCU** (emissions from net emission savings from carbon captured and permanently chemically bound in long-lasting products) of the prescribed formula for calculating emissions savings in the Annex of this DA are also integrated in the DA on RFNBOs and RCFs, to keep legislative consistency for RFNBOs, RCFs, and low carbon fuels.

**7) E ex-use should consider explicitly landfill diversion, including for plastic waste** Emissions from inputs' existing use or fate (E ex-use) should account for the avoided emissions resulting from diverting waste, including fossil-based waste, from landfills. While for biogenic emissions this has been clarified in the Q&A published by [the European Commission's DG Energy](#) (see [question and answer 43](#)), the fossil fraction is not covered by this analysis, which writes: "The fossil carbon incorporated in the composition of the fuel cannot be considered, however, as landfilled waste is not combusted."

The current interpretation, which suggests that diverting fossil waste from landfills does not lead to additional GHG savings (as referenced in the Q&A document), **is inconsistent with the methodology used by the Innovation Fund under the European Union Emission Trading Scheme (EU ETS)**. The Innovation Fund methodology provides for an existing use scenario based on landfills and assumes that CO<sub>2</sub> equivalent avoided emissions from landfill diversion shall “be equal to those for incineration without energy recovery, because although landfill sequesters part of the carbon, it is not desirable to encourage landfill for other environmental reasons (such as fugitive GHG emissions of CH<sub>4</sub>)” [1].

We call for consistency across EU legislative frameworks and emphasise the importance of upholding the waste hierarchy, which prioritises treatment methods like WtE over landfilling. Recognising landfills as a CO<sub>2</sub> sink would contradict these principles and could undermine efforts to divert non-recyclable waste from landfills. Legislation should avoid incentivising landfill use and instead support higher-order waste treatment processes that contribute to GHG emission reductions and circular economy objectives.

#### **8) Emissions from processing (e p) should consider unavoidable emissions from non-recyclable plastic waste in WtE Plants**

Given that WtE plants treat only non-recyclable waste according to the waste hierarchy, emissions from fossil-origin plastics, which are **unavoidable**, should not be penalised under **emissions from processing (e p)**.

### **Concluding remarks**

After all, Waste-to-Energy is an essential part of the European waste management and contributes to the decarbonisation of the sector, as it diverts non-recyclable waste from landfills and recovers energy and secondary raw materials, thus providing reliable partially renewable energy, reducing the dependence on imported virgin fossil resources and preventing GHG emissions. Waste-to-Energy plays a role in the transition to a circular economy and can maximise the circular economy's contribution to decarbonisation provided full respect of the waste hierarchy[2].

The contribution of Waste-to-Energy to the production of alternative fuels, through Waste-to-Hydrogen and Waste-to-Fuels, is an opportunity to highlight how WtE can be part of the EU decarbonisation process, as a local and constant source of hydrogen and fuels from a partly renewable energy output.

[1] “Innovation Fund Methodology for GHG Emission Avoidance Calculation”, February 2021

[2] “Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions - The role of waste-to-energy in the circular economy - COM/2017/034 final”, p. 10, available here: <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52017DC0034>

## Additional information

**WtE: A solution for reliable low carbon fuel** WtE covers a wide range of different technologies with proven advantages to the European energy mix. Energy from waste presents a significant versatility as it produces not only heat and power, but also useful products; WtE can contribute to the production of **renewable and low carbon fuels and hydrogen** (Waste-to-Fuel and Waste-to-Hydrogen), whereby the combustion of municipal solid waste can provide some or all of the energy required for the generation of hydrogen through electrolysis or certain types of gasification (for pre-treated waste).

Since energy from WtE is partly renewable under REDIII, the fuel it produces is also partially renewable. Consequently, hydrogen from WtE processes qualifies as renewable if it meets the sustainability criteria and thresholds set by RED. The portion of hydrogen linked to the fossil- origin waste should be classified as a low carbon fuel, provided it complies with the relevant criteria and thresholds outlined in the Gas Directive and the draft Delegated Act in hand.

**Waste-to-Hydrogen (WtH)** represents a significant alternative to fossil fuels in powering fuel cell buses in cities or refuse trucks collecting municipal waste. Several hundreds of refurbished or new plants treating municipal waste throughout Europe would thus have potential to become as many local sources of renewable and low carbon hydrogen. Already, promising pilot demonstrations and projects at various stages of development are now taking off in Europe.

**Waste-to-Fuel (WtF)** involves the production of synthetic fuels (such as methane, methanol, and ethanol) by combining captured carbon dioxide from the WtE plant with hydrogen either derived from WtH processes as described above or from other renewable sources. These synthetic fuels are considered part of CCU technologies and are used as low carbon alternatives for transportation and other industries, helping to decarbonise sectors reliant on high-energy fuels.

Renewable and low carbon hydrogen and fuels are considered key to the climate objectives. WtH and WtF solutions offered by WtE increase the contribution of the sector to the decarbonisation of Europe.

### For more information:

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