

Single-use plastic beverage bottles public consultation: Ensuring credible and verifiable recycled content through effective mass balance

Plastics Europe welcomes the publication of a draft Implementing Decision on EU harmonised rules for calculating, verifying and reporting recycled content in single-use plastic beverage bottles. We support in particular the Commission's explicit recognition of chemical recycling as a complement to mechanical recycling, its support for a credit-based fuel-use exempt mass-balance methodology in existing and new assets, and the intent to bring forward clear and implementable rules.

From the perspective of plastics producers, this proposed text includes a number of positive aspects. However, concerns were raised that key provisions are extensively complex, lack clarity, and can be interpreted in an overly restrictive way. These issues can have two far-reaching consequences: a restrictive interpretation that hampers the utilisation of some existing assets and limits the potential for expansion of new recycling capacity in Europe; as well as diverging interpretations by national authorities that further fragment the internal market. In both cases, there would be a further negative impact on the competitiveness of a strategic EU sector in crisis. Barriers to delivering recycled plastic content would also remain. Moreover, our members have wider concerns about how these new recycled content calculation rules can be consistently implemented, and enforced, across the European Union and at its borders.

The Single Use Plastics Directive offers a welcome opportunity to test, for the first time, complex, theoretical calculation rules in real industrial processes. However, tailored changes would be needed if rules are to unlock circular business models for affected economic operators. Therefore, it is vital that the current draft text is clarified with targeted changes. Once adopted, implementation and effectiveness of these rules must be monitored, reviewed and, if required, the calculation methodology updated. It is essential that rules adopted under Single Use Plastics Directive Implementing Decision do not automatically become the default rule set for mass balance in other pieces of legislation without completion of an ex-post evaluation, and if required, further improvement.

We remain committed to supporting the Commission in its efforts to further refine and clarify its proposed text to deliver clear, technology-neutral and simple set of rules. Rules that ensure a level-playing field between chemical recyclers in the EU and in third countries, and enable scalable and competitive investments for a genuinely circular Europe.

The Single Use Plastics Directive (SUPD) is an important piece of legislation for Europe's plastics value chain. Amongst other measures, it sets recycled content targets for single-use plastic beverage bottles. With this latest proposed Implementing Decision, it will establish the first EU rules for calculating recycled content in processes where there is no physical segregation of material inputs of different origin and outputs are later separated and routed to fuel and non-fuel use.

Acknowledging the role of chemical recycling in a circular economy for plastics

Plastics Europe believes that all mechanical, physical and chemical recycling pathways and technologies are necessary to increase and scale plastics recycling and achieve a circular economy for plastics in the EU. Therefore, we welcome the clear recognition in the proposed text that chemical recycling as a technology can contribute towards achieving EU recycled content targets.

Our members aim to expand Europe's plastics recycling capacity using all viable routes, including through co-processing in large installations which are also producing significant volumes of outputs used as fuels. However, operators of these installations can be constrained by a restrictive interpretation of the current legislative framework

Co-processing of fossil and circular feedstocks from different origins has the advantage of quickly and efficiently expanding urgently needed plastics recycling capacity in Europe, without incurring significant additional costs that weigh on competitiveness. Use of existing assets (i.e. steam crackers, polymerisation assets, refineries, etc) can match and stimulate supply of recycled products, thus strengthening the business case for future investments in new recycling technologies or additional chemical processing infrastructure in Europe. Also, utilising existing European infrastructure grants plastic producers a more immediate route to market at a time of unprecedented competitiveness pressure and enables a faster transition to a circular business model in Europe.

Clear, technology-neutral rules are essential to enable investment in circular technologies

To achieve a circular outcome, clear, technology-neutral and simple rules on fuel-use excluded mass-balance are needed to help our industry plan potential investments in the widest possible range of European recycling infrastructure. Despite significant efforts by the Commission, Plastics Europe believes that the proposed draft Implementing Decision has not yet fully met these criteria. We are hopeful that, with specific clarifications, several issues can be improved (see annex).

The lack of clarity stems from the complexity of the draft Implementing Decision and the challenges with its interpretation. This complexity is most challenging in its application to chemical recycling assets that are integrated into refineries and can be read to create significant constraints for them. This means that there is an economically viable environment for only some existing chemical recycling technologies. We believe that this Implementing Decision should create the necessary enabling framework for all chemical recycling technologies without bias. The proposed rules should not discourage current or future chemical recycling technologies.

A level playing field within Europe and at its frontiers

An additional challenge is that European plastic producers are under significant and prolonged competitiveness pressures from third country producers, who have been flooding the market with cheaper virgin plastic and "virgin-like" recycled plastics. We understand that the Commission is working to bring forward a separate framework to verify and certify recycled content, and urge that any verification/certification or enforcement measures must ensure a level playing field for both

domestically produced and imported plastics. Failure to do so would result in a lose-lose, undermining the wider environmental and circular economy objectives of the SUPD, and further eroding the competitiveness of the plastics industry in Europe. Jobs and investments would also continue to be offshored with a ripple effect on our value chain partners.

Within the EU consistent implementation across Member States will be critical to avoiding market fragmentation. Clear guidance and harmonized interpretation of these rules are essential to ensure that recycled content calculations are applied uniformly throughout the EU.

Use the SUPD as a test case for complex rules

Plastics Europe wishes to point out that this proposal is a legislative first for the European Union. We also recognise that, although the Single Use Plastics Directive rules will only apply to single-use beverage bottles mainly of PET, future rules would not be differentiated by application and polymer. Therefore, economic operators should expect to apply the rules adopted under this Directive to other applications and polymers.

However, Plastics Europe believes that the EU's first attempt to regulate the calculation of recycled content coming from chemical recycling through co-processing with other streams should not set a *verbatim* precedent for other upcoming pieces of legislation that may also regulate chemical recycling (e.g. Packaging and Packaging Waste Regulation, End of Life Vehicles). Rather these initial rules set under the Single Use Plastics Directive should be moved forward quickly so that they can act as a test case, where the implementation of these rules is monitored, assessed via an ex-post evaluation and if required, revised.

Conclusion

Plastics Europe and our members are committed to supporting the Commission in its efforts to further refine and clarify its proposed Implementing Act to deliver a credible, clear, and implementable set of rules. This will ensure a level playing field between chemical recyclers in the EU and in third countries, and enable scalable and competitive investments for a genuinely circular Europe.

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Annex – Proposed amendments to the Commission’s proposed implementing decision.

Plastics Europe wishes to propose the following amendments to draft Implementing Decision on EU harmonised rules for calculating, verifying and reporting recycled content in single-use plastic beverage bottles. While the below amendments are required to support certain chemical recycling technologies, they are however not sufficient to enable all technologies. Rather, our proposed amendments seek targeted changes for some of the issues we have highlighted whilst seeking to respect the Commission’s original proposal.

Article 1(6) – Definition of recycling technology:

This article defines recycling technology by referencing the definition already provided in Regulation 2022/1616 which states:

“a specific combination of physical or chemical concepts, principles, and practices to recycle a waste stream of a certain type and collected in a certain way into recycled plastic materials and articles of a specific type and with a specific intended use and includes a decontamination technology.”

While this definition primarily was thought to cover mechanical recycling, it also implicitly frames that the output of recycling operations can only be a recycled plastic. This assumption does not fully apply to chemical recycling, particularly pyrolysis in which the output is a recycled oil. Although the criteria for EU harmonized End-of-Waste (EoW) status are yet to be defined, we recommend revising this section to adopt a broader and more inclusive definition of recycling technology. As a legal bases, according to Article 6 of Waste Framework Directive on EoW a secondary raw material can be a product or substance and not necessary a material (plastic).

We therefore propose the following amendment to Article 1(6):

“‘recycling technology’ means ~~recycling technology as defined in Article 2(3), point (1), of Regulation (EU) 2022/1616~~ a specific combination of physical or chemical concepts, principles, and practices to recycle a waste stream of a certain type and collected in a certain way into a secondary raw material as defined in Article 6 of Directive 2008/98/EC of a specific type and with a specific intended use and includes a decontamination technology.”

Article 1(12) – Mass balancing period:

Proposal to amend as current text should reflect that not eligible materials but attributed amounts are leaving the facility:

*‘mass balancing period’ means the timeframe in which the amounts of eligible material are entering and **attributed amounts** are leaving a given facility”*

Article 1(15) – Definition of chemical building blocks:

The recognition of all material outputs including non-polymers is central to the ‘fuel-use excluded’ approach (Recital 20). We understand that credits (calculated according to Article 7.3 and 7.4) can be allocated to outputs that are a chemical building blocks or -at the end- to polymers and not used for fuel production. We also understand that a chemical building block covers molecules that can be identified as reactive in nature, specifically oligomers, dimers, monomers, and other reactants. We are concerned that the current wording of the definition of ‘chemical building blocks’ is not explicit about the inclusion of oligomers and dimers as well as products and materials as per the intention under the Waste Framework Directive. This is relevant if the legal text is indeed replicated for content targets on materials other than polymers. Specifically, we propose that Article 1(15) should be updated to read as follows:

*‘chemical building blocks’ means chemicals that form the base for **or can be processed into non-fuel products, materials or substances including** polymers, as defined in Article 3, point (5), of Regulation (EC) No 1907/2006, including monomers, **dimers, oligomers, aromatics**, and other reactants such as initiators for polymerisation*

Whilst current European Chemicals Agency Guidance suggests that dimers and oligomers are within the REACH Article 3(5) definition of polymers, making this interpretation explicit in an additional recital to the proposed legal text would provide welcome clarity and certainty.

Article 7 (3) - Application of Mass Balance Approach to Co-processing:

Plastics Europe believes that significant uncertainty remains as to the correct interpretation of Article 7(3)(f) in conjunction with Article 7(3)(h). Specifically, determining the weight of material fed into the steam cracker(s) when read in conjunction with the prescribed calculation points at which eligible material is attributed to outputs. Typically, co-processing is a multi-step process between input of feedstock (i.e. calculation point 1) and the segregation of materials for fuel-use and non-fuel use at the output of the steam cracker (i.e. calculation point 2). It should be clarified that after the first calculation point as described in the first paragraph of Article 7(3), the next calculation point shall be the output of steam crackers or crackers. To avoid inconclusive implementation, we propose the following change to address this topic:

Article 7(3)(h): *the next calculation point **following the first calculation point that is located on the recycling pathway** in which the attribution of input eligible material to the different outputs is to be determined shall be at the output of the steam cracker or crackers.*

Additionally, our reading of Article 7(3) suggests that it does not accommodate the possibility of material to be separated from the processing stream after calculation point 1, but before the steam cracker. Low-molecular weight molecules (such as propylene) can form as a by-product after calculation point 1. These molecules can be separated from the processing stream before entering

the steam cracker and used for non-fuel products (i.e. before calculation point 2). For instance, propylene formed during secondary processing or upgrading, is often isolated before entering the steam cracker and used for polymerisation or other non-polymer, non-fuel, uses.

Plastics Europe encourages policymakers to provide further clarity on both these points. More specifically, we ask that Article 7(3) is explicit and that:

- economic operators are not obliged to use the Article 7(4) approach for intermediate process steps that occur between calculation points 1 and 2.
- economic operators are permitted to attribute materials (for example low molecular weight molecules) that are separated from the steam cracking processing stream before calculation point 2 and used in non-fuel uses, in their mass balance accounting.

We are concerned that a failure to provide clarity on these aspects of Article 7(3) creates uncertainty about the implementation of these rules. This uncertainty is detrimental as it risks creating the conditions for Member States to take differing interpretations of these rules. If this were to occur, it would create unfair competitive distortions in the EU's Single Market because a given facility's output of recycled content would, in that case, be largely determined by the interpretation of these provisions by the member state authority.

Article 7 (4) - Application of Mass Balance Approach to Co-processing: Calculation point not located before the eligible material enters the steam cracker and/or the input eligible material is not in liquid form

Article 7 (4) (c) (iii) (1): the mandatory dual-use factor for solids is currently set to zero. While it is true that existing technologies may not yet enable solid dual-use streams to be converted into feedstocks for plastic production, the current wording risks hindering future innovation. Provided that the boundary conditions for calculating recycled content remain consistent with the definition of recycling under the Waste Framework Directive (WFD), the rules should not arbitrarily exclude products without substantiated evidence. In principle, any future innovation enabling such conversion should be recognised and encouraged as fully aligned with the WFD's recycling definition.

We therefore propose the following amendment:

- *“(iii) for outputs of the output category “dual-use outputs”, the dual-use factor shall be:
~~—— (1) equal to 0 where the output is solid;~~
~~—— (2) equal to the share for which the economic operator provides verifiable evidence that it remains on the recycling pathway where the output is liquid or gaseous.”~~*

Article 8 – Verification and Article 9 – Collection and reporting of data by Member States

It is essential that any verification, certification, or enforcement measures are designed to ensure a level playing field between domestically produced and imported plastics. Failing to do so could compromise the broader environmental goals of SUPD and further impact the competitiveness of European industry. To ensure a fair level playing field we suggest an approach to verification similar to the system implemented by Commission for Biofuels and RED legislation, where specific certification schemes were recognized directly by the EC and entrusted to audit the (EU and not EU) economic operators of the supply chain ensuring their compliance. This approach could also be useful to avoid the need to disclose companies' sensitive information to next operators of the supply chain like requested in point 4.2 of Annex V (b) where the "list of economic operators at previous steps of the supply chain" needs to be disclosed in case of application of Mass Balance Approach in the supply chain.

Concerning verification by downstream users (Article 8 (3)), Plastics Europe members welcome the provision exempting economic operators who do not alter the material from generating declarations, allowing them to simply forward supplier declarations to customers, thereby reducing administrative burden across the value chain.

Recitals - Amendments suggested to guarantee consistency with amendments proposed to the main text

As mentioned in our comments on Article 7 (4) (c) (iii), we believe that setting a mandatory dual-use factor of 0 to solid outputs is arbitrary and risks hindering future innovation. We therefore propose the following amendment to Recital 20:

Recital 20: *"For the application of mass balance accounting, it is necessary to establish rules on how the input eligible material can be allocated to the outputs in case of multi-output processes. The rules laid down in this Decision reflect the so-called 'fuel-use excluded' approach, meaning that at each calculation point economic operators should deduct eligible material that is processed into fuels or losses from the calculation of recycled content, in order to comply with Article 3(17) of Directive 2008/98/EC of the European Parliament and of the Council⁴. This applies also for dual-use outputs, i.e. intermediate outputs that can be further processed into both fuels and non-fuel products, ~~that are in liquid or gaseous form. Dual-use outputs in solid form, such as char that is formed during pyrolysis, should be taken completely out of the calculation of recycled content because they are expected not to be processed into high-value non-fuel products in practice at a relevant scale in the foreseeable future.~~"*

Recital 21 has been amended to ensure consistency with the other changes that were proposed:

Recital 21: *"Attributed amounts of eligible material should not be shifted across different facilities of a company or across different companies as this would add complexity to calculation and verification of attributed amounts. That should however not prevent physically moving material with attributed amounts between different facilities of a company or between different companies without reallocating their attributed amounts, provided that the material is accompanied by the necessary documentation to ensure **compliance with this Decision** ~~traceability and provide the basis for calculation in case of subsequent mixing with other materials.~~"*