

Cefic position on biomass-derived plastics

SUMMARY

Cefic welcomes the renewed attention around the use of biomass for plastics and its potential to increase the share of sustainable non-fossil carbon sources¹ while contributing to a circular economy. Nevertheless, further actions are necessary to reap the full benefits related to the use of biomass for plastics. Only 1% of plastics come from biobased feedstock accounting for just 0.029% of the global biomass demand in 2021².

To bolster the sector's transition, we developed a set of recommendations.

Specific to the Packaging & Packaging Waste Regulation (PPWR), we propose to introduce the term *biomass-derived plastics* for a clearer reference to the use of a wider range of plastics from biomass. Furthermore, the definition of bio-based plastics ex Art. 3 (53) PPWR should be updated with the following definition: *Biomass-derived plastics are plastics wholly or partly derived from biomass, encompassing bio-based and bio-attributed plastics.*

We welcome the review of the state of technological development and environmental performance of bio-based plastic packaging and the evaluation of the introduction of targets as an incentive for biomass-derived plastics. In general, we emphasize the importance of setting targets considering both bio-based and bio-attributed plastics and of setting them at a pragmatic level based on a comprehensive impact assessment.

Establishing sustainability criteria for biomass sourcing that apply to all types of biomass - regardless of their final use - is another fundamental action to reach a level playing field between energy and material uses. To this end, we support the use of the sustainability criteria ex Article 29 (2-7) Renewable Energy Directive (RED) III as a basis to define the boundaries for sustainable biomass sourcing.

Finally, we call for the pragmatic implementation of a “cascading use” principle to maximize the efficient use of biomass, ultimately fostering complementary rather than competing demands across sectors. Consequently, we ask for the introduction of incentives and support for the use of biomass in the chemical industry as well as for the development of integrated processing facilities.

Introduction

Biomass as a feedstock can reduce dependency on non-sustainable carbon and contribute to sustainable plastic production. However, the use of biomass for plastics is currently shallow: only 1% of plastics come from biobased feedstocks, accounting for 0.029% of the 2021 global biomass demand¹.

Therefore, Cefic calls for accelerating the roll-out of measures to support the widespread use of plastics derived from biomass - also in line with the scope of Article 8 of PPWR - by:

¹ Cefic's definition of sustainable non-fossil carbon sources includes all sources of sustainable circular carbon even if originally coming from fossil sources.

² Pia Skoczinski, Michael Carus, Gillian Tweddle, Pauline Ruiz, Nicolas Hark, Ann Zhang, Doris de Guzman, Jan Ravenstijn, Harald Käß and Achim Raschka (March 2024) - *Biomass utilization worldwide*. [Biomass Utilisation Worldwide \(PNG\)](#) | [Renewable Carbon Publications \(renewable-carbon.eu\)](#) – Last viewed October 2024

- Clarifying the terms and definitions around plastics deriving from biomass.
- Establishing clear sustainability criteria for biomass sourcing that apply to all types of biomass regardless of its final use.
- Swiftly executing the announced review of the state of technological development and environmental performance of bio-based plastics packaging and evaluating the introduction of targets as a pull incentive for biomass-derived plastics.

These actions are a fundamental step towards establishing a level playing field with other sectors and are instrumental in promoting the transition towards more sustainable plastics production.

Accordingly, we have developed a set of recommendations to support the increased use of biomass as feedstock.

The definition

Cefic proposes to amend the definition of bio-based plastics ex Article 3 (53) PPWR with the concept of *biomass-derived plastics*.

This is to include a clearer reference to the use of biomass for manufacturing such plastics and to ensure a technology-neutral approach where any future target for plastics derived from biomass is open to all technological solutions for plastics production.

Biomass-derived plastics encompass:

- *Bio-based plastics*, those for which the share of bio-based content can be measured via established radiocarbon methods (¹⁴C tracing). These may be fully or partially bio-based.
- *Bio-attributed plastics*, those for which the use of bio-based feedstocks, substituting part of the raw material needed in the manufacturing process, has been attributed to the product via the mass balance method and is certified according to a third-party certification scheme. Mass balance is a chain-of-custody approach ensuring that the bio-based feedstock is accurately accounted for, even if the final product is obtained using a mix of feedstocks from different origins. No claims of bio-based ¹⁴C carbon content can be made for bio-attributed products.

Thus, *biomass-derived plastics are plastics wholly or partly derived from biomass, encompassing bio-based and bio-attributed plastics*.

It is important to ensure that claims are transparent about which type of biomass-derived plastics they refer to and the amount of bio-based feedstock used in the product or the content in the final product. GHG accounting and GHG claims aspects are not the subject of the present paper and are therefore not covered.

Further definitions related to end-of-life characteristics of plastics (e.g. compostability, recyclability) should not be included in the definition to avoid creating confusion between product definition and end-of-life characteristics. Nevertheless, biodegradable and compostable plastics surely play an important role in the bioeconomy and Cefic's view on them can be found in the dedicated [position paper](#).

Targets

Cefic welcomes the Commission's review of the state of technological development and environmental performance of bio-based plastic packaging and the evaluation of the introduction of targets as an incentive for biomass-derived plastics and recommends swift execution of the review.

In general, eventual targets to increase the use of biomass as feedstock in plastic packaging as set in the PPWR should consider the possible contribution of both bio-based and bio-attributed plastics thus allowing all technologies to contribute to the transition towards sustainable carbon sources. Targets should be set at a realistic level based on a comprehensive impact assessment, considering (sustainable) biomass availability, technical (and economic) feasibility of biomass conversion to plastics, market development, different packaging items, different end-of-life options, existing national legislations, and broader socio-economic factors.

Sustainability criteria

Establishing a clear set of sustainability criteria for biomass sourcing that apply to all biomass regardless of its final use is essential. It is the first step to reach a level playing field for all sectors using biomass whether for energy or material uses. Cefic supports using sustainability criteria, *ex Article 29 (2-7) RED III*, to define the boundaries for sustainable biomass sourcing.

Cascading principle

Cefic calls for the pragmatic implementation of a “cascading use” principle that should neither be a prescriptive tool mandating priority uses of biomass in detail, nor establishing difficult-to-define socioeconomic hierarchies. Instead, the principle should aid in achieving the highest efficiency of biomass use and the lowest possible environmental impact through the design of incentives.

Directive EU/2023/2413 (RED III) already describes the cascading use of biomass. Therein, the focus is on support schemes and avoiding incentivizing unsustainable pathways and distorting competition with the material sectors, to ensure that biomass is used according to its highest economic and environmental added value.

Therefore, the first step is for policy to provide incentives for the material uses of biomass in the chemical industry (e.g. by introducing stimulating policies designed for biomass-derived products). This is necessary as the main bottleneck to the use of biobased feedstocks is the lack of cost competitiveness with the fossil counterpart.

It is important to recognize that there can be synergies between the use of biomass in different sectors. Supply chains for bio-based feedstocks will rely on developing integrated processing facilities. These facilities co-produce a range of products (chemicals, plastics, fuels) from these feedstocks, leading to more sustainable integrated processes. Incentives/support should therefore be directed toward integrating value chains and ultimately create complementary and not competing demands between sectors.

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About Cefic

Cefic, the European Chemical Industry Council, is the forum of large, medium and small chemical companies across Europe, accounting for 1.2 million jobs and 13% of world chemicals production.