

New tailwind for renewable carbon plastics in EU policy?

nova-Institute's take on the recently published EU proposal for a Packaging and Packaging Waste Regulation as well as the new policy framework for biobased, biodegradable and compostable plastics.

The long-awaited proposals for a policy framework for biobased, biodegradable and compostable plastics as well as for the revision of the currently existent Packaging and Packaging Waste Directive, commonly dubbed as PPWD/R, were published by the European Commission at the end of November 2022. Both proposals will bring substantial changes to the EU policy landscape covering plastics containing renewable carbon.

The proposed PPWR has three main objectives. First, to prevent the generation of packaging waste: reduce it in quantity, restrict unnecessary packaging and promote reusable and refillable packaging solutions. Second, to boost high quality ('closed loop') recycling: make all packaging on the EU market recyclable in an economically viable way by 2030. And finally, to reduce the need for primary natural resources and create a well-functioning market for secondary raw materials, increasing the use of recycled plastics in packaging through ambitious mandatory recycled content targets.

It also acknowledges the value of a material property that had not seen specific support in the EU policy landscape before: Biodegradation and industrial compostability are at the core of measures targeting very specific packaging applications. Two years after the PPWR will officially enter into force, the following applications shall be compostable in industrially controlled conditions in bio-waste treatment facilities:

- Tea or coffee bags necessary to contain a tea or coffee product and intended to be used and disposed of together with the product;
- Coffee or tea system single-serve unit necessary to contain a coffee or tea product and intended to be used and disposed of together with the product;
- Sticky labels for fruit and vegetables;
- Very lightweight plastic carrier bags.

This is a positive development in line with scientific findings, among others by nova-Institute's "BioSinn – Products for which biodegradation makes sense" project. Scientific evidence suggests that biodegradation is an environmentally beneficial property if collection and recycling of certain products is not possible even under completely appropriate management of the products – so-called "loss applications" end up in the environment in almost all cases and their in-situ biodegradation prevents pollution. Industrial compostability, however, requires collection and managed disposal, which means this makes sense mostly in applications that either offer secondary benefits such as increased collection of other bio-waste or improve compost quality (such as the lightweight plastic bags for collection or coffee grounds for compost quality), prevent pollution of biowaste streams (such as sticky labels on fruit) or that are so heavily contaminated and wet that their incineration is not economically feasible (as with tea bags and coffee pads). We strongly welcome that the Commission has taken a step into putting these findings into political practice and proposes to make the use of industrially compostable materials obligatory for these applications. With regard to non-packaging loss applications, for which in-situ biodegradation makes sense, hopefully other legislation will follow.

In another aspect, however, the proposed Regulation fails to take an important step towards a more sustainable plastics industry. Among experts, stakeholders and the Commission it has been discussed repeatedly to include bio-based content as equal to recycled content in plastics. nova-Institute, as a propagator of the renewable carbon concept, which argues we need all feedstocks that allow us to shift away from the use of virgin fossil resources, is fully behind this proposal and we regret to see that it was not included in the proposal. We understand and support that recycling is the first choice in making a circular economy become reality, but acknowledging bio-based content in plastics would offer an opportunity to address several critical issues related to the implementation of the circular economy. It could lessen the pressure on recycling capacities in the first short-term step, offer solutions for contact-sensitive applications that are not allowed to use recycled material as well as pragmatically support bio-based materials and thus realise more ambitious renewable material quotas in the mid-to-long term that decrease Europe's dependence on fossil resources. Similar arguments speak in favour of including CO₂-based plastics in the quotas. This recent example highlights once more that the source of carbon feedstock is still not considered

important by EU policy makers. Utilisation of fossil carbon will remain attractive, until it becomes evident that the use of alternative carbon sources is seen favourably by policy and framework conditions are put in place to support them.

The idea to open the quota was not included for a variety of reasons in the current proposal. The Commission set out to address the most severe shortcomings of the PPWD that were identified in the evaluation. One of those is that recycling rates have not increased sufficiently in the past years, so the focus has remained on recycling only. Another reason for the non-inclusion was that there is not a pre-fixed and agreed-upon set of sustainability criteria for bio-based plastics that could have been included in the regulation. Other stakeholder groups are also sceptical of the proposal – some, such as NGOs are concerned that the widening of the quota will water down recycling efforts, while others fear that opening the quota for bio-based materials will detract from investments in advanced recycling technologies. While some of these concerns are valid, nova-Institute and the Renewable Carbon Initiative are convinced that they can be solved pragmatically and we will continue our dialogue with policy makers to argue in favour of this instrument.

Specific policy framework for biobased, biodegradable and compostable plastics

The Commission also published a new framework on biobased, biodegradable and compostable plastics which clarifies in what way these plastics can be part of a sustainable future. The topics mostly concerning policy makers are sustainable sourcing of biomass, how to ensure that bio-based plastics offer real environmental benefits, proper labelling to avoid confusion of consumers and how biodegradation and composting can contribute to more sustainable disposal of plastic waste.

After reading a leaked draft that had an overall relatively cautious and negative tone, we were pleased to read the final policy framework as a more neutral and objective document. Prompted by the earlier draft, nova-Institute and the Renewable Carbon Initiative's (RCI) Working Group Policy developed a position paper generally welcoming the framework but also calling for some adjustments to acknowledge the advantages and opportunities offered by biobased plastics. The need to shift away from fossil carbon is still not recognised strongly enough, but we see steps in the right direction.

The framework states that biodegradable plastics should only be used in applications where their environmental benefits and value for the circular economy are proven. This is compliant with scientific evidence and the general line of thought regarding biodegradable plastics that nova-Institute has propagated in its BioSinn report and several other cases. The document's stance on industrially compostable is also in line with the evidence described above and with the actions already taken in the proposal for the PPWR.

Apart from the adoption of compostable plastics in the PPWR, there is no legally binding action to be seen yet from the policy framework. The document shows that there are still quite some reservations within the Commission towards bio-based plastics and that we need continued dialogue, strong evidence illustrating their benefits and continuous work to accelerate Europe's shift away from fossil carbon.

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