

# Cefic policy proposals to introduce biomass-derived content targets

## Executive Summary

This paper sets out why product-level biomass-derived<sup>1</sup> content targets are needed to accelerate the EU bioeconomy and how such targets can be designed and implemented quickly to unlock investment, build lead markets, and support a stronger bioeconomy.

- **Adopt product-level biomass-derived content targets** to create demand certainty and unlock investment.
- **Keep biomass-derived content targets separate** from recycled content/captured carbon targets (complementary, not competing).
- **Count the contribution of both *bio-based* and *bio-attributed* products** to meet biomass-derived content targets.
- **Set biomass-derived content targets by product or product group**, adjusting both the level and requirements to align with the specificities, feasibility, and practical considerations of the selected product/product group.
- **Implement incentives such as EPR-Eco modulation and VAT reductions, and consider other dedicated measures to support emerging value chains facing technological and financial challenges.** This would help scale innovative biomass-derived materials, especially bio-based ones, and should be aligned with the overall objective of improving the efficiency of waste management and maximising recycling.
- **Provide for responsibility at brand-owner level, with a consistent approach across sectors, while recognising the need for a level playing field and a well-functioning value chain.** While obligations would sit with brand owners, success depends on a functioning, fit-for-purpose value chain that can supply the required ingredients and raw materials for final products. To this end, safeguards and flexibilities should be introduced.
- **Set a predictable ramp-up with milestones and review.** A clear, realistic trajectory with short- and long-term targets, including intermediate steps, avoids stop-start market effects and supports timely capacity build-out. It also enables predictable regulation and better market behavior than frequent legislative reviews.
- **Add sustainability safeguards for biomass sourcing** used in products benefiting from policy incentives, according to RED III Art. 29(2–7).
- **Leverage existing product-specific legislation and ESPR and use Biotech Act II** to enable targeted amendments introducing clearer definitions, fill gaps with existing product policies, and ultimately yield a coherent policy framework.

<sup>1</sup> Biomass-derived products are products wholly or partly derived from biomass, encompassing bio-based and bio-attributed products.

## Introduction

The chemical industry sits at the heart of the modern economy, supplying essential materials that allow progress and innovation. Within Europe, the chemical sector is experiencing a significant transformation as it accelerates its journey towards net-zero emissions. Alongside energy efficiency, electrification, and circularity, the bioeconomy is a key pillar<sup>2</sup>: scaling the use of sustainable biomass to produce chemicals and materials can lead to emission reduction and strengthen Europe's industrial base and resilience in the global landscape.

To accelerate and scale uptake, demand-side measures are essential. Along with the existence of the recycled content targets, product-level biomass-derived content targets can create demand certainty and help close the investment gap, alongside complementary measures (e.g., enabling conditions such as affordable energy, fiscal incentives, or reduction of feedstock costs).

Bio-based<sup>3</sup> and bio-attributed<sup>4</sup> materials and products —produced leveraging dedicated and conventional facilities—can offer environmental benefits while supporting competitiveness and resilience. A technology-neutral approach is needed: drop-in and novel pathways should both contribute to drive innovation across the value chain, while specific incentives could be introduced to support emerging value chains facing technological and financial challenges, and to help scale innovative bio-based materials.

This paper calls for EU product-level biomass-derived content targets (covering both bio-based and bio-attributed products), designed to be effective and implemented quickly via the Ecodesign for Sustainable Products Regulation (ESPR) through a dedicated delegated act, complemented where needed by the Biotech Act II that could cover gaps and target legislation already foreseeing possible bio-targets (e.g., ELVR, PPWR).

## Why biomass-derived content targets are needed

Achieving widespread integration of the bioeconomy and supporting further growth requires the establishment of appropriate frameworks. Setting specific product-level biomass-derived content targets will:

- **Gradually improve market mechanisms to incentivise biomass-derived products.** Targets can help level the playing field where carbon pricing and other incentives are insufficient.
- **Create demand certainty.** Minimum content requirements translate policy goals into bankable offtake signals to support scale-up.
- **Drive scale and cost reduction.** Higher volumes accelerate learning, supply-chain maturity, and unit-cost declines.
- **Unlock private investment.** Targets reduce commercial risk and help bio-based innovations cross the “valley of death<sup>5</sup>” to reach full commercialization.
- **Accelerate the incorporation of biogenic carbon.** Embedding biogenic carbon in products pulls change upstream across feedstocks and processes.

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<sup>2</sup> See Cefic's iC2050 study: the base case scenario forecasts an increase in biomass use within the chemical industry from about 9 to about 60 Mt, going from 2019 to 2050, where the industry reaches net-zero. Biomass contributes to achieving the net-zero goal together with recycled carbon (about 20 Mtons), captured carbon. Fossil carbon contributes for around 50 Mtons over a total of 140 Mtons carbon consumed.

<sup>3</sup> *Bio-based products* are those for which the share of bio-based content can be measured via established radiocarbon methods (<sup>14</sup>C tracing). These may be fully or partially bio-based.

<sup>4</sup> *Bio-attributed products* are 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. No claims of bio-based <sup>14</sup>C carbon content can be made for bio-attributed products.

<sup>5</sup> The critical, often fatal, gap in innovation's lifecycle between initial research and successful commercialization.

- **Support the use of lower-emission feedstocks and resilience.** Sustainable biomass can help support lower emissions at the source and reduce reliance on imported feedstocks.

## Targets design and implementation recommendations

To be effective, targets need clear rules on scope, accounting, point of obligation, trajectory, and flexibility.

The key messages are summarised above; the points below expand on how to operationalise them. Cefic further recommends that, when setting the targets, policymakers take into account several key considerations to allow for effective implementation, including existing national measures and other applicable EU legislation. Targets should be ambitious yet achievable, grounded in realistic assessments of feedstock availability, technological readiness, economic, and environmental viability. Hence, we ask to consider the following recommendations:

- **Keep targets dedicated to biomass-derived content** so they do not compete with recycled content or captured carbon targets.
- **Set a single biomass-derived content target per product<sup>6</sup>/product group<sup>7</sup> and count both bio-based and bio-attributed products towards meeting those targets to ensure technology neutrality.** This approach ensures a technology-neutral approach, allows both value chains to contribute, and helps in keeping the policy framework manageable and predictable, avoiding overcomplication and guaranteeing flexibility for brand-owners. Furthermore, content targets should not be set at the item level, as this would drastically reduce the flexibility for manufacturers. A possible approach could be to look at the manufacturing plant level.
- **Implement incentives such as EPR-Eco modulation, VAT reductions<sup>8</sup>, and consider other dedicated measures to support emerging value chains facing technological and financial challenges.** To help scale innovative biomass-derived materials, especially bio-based ones, we recommend implementing measures that reflect the specific characteristics of technologies and products, as well as their varying levels of innovation and investment needs:
  - VAT reductions to be applied for products having a certain minimum share of circular<sup>9</sup> content. The VAT would apply to final products using circular-based carbon chemicals as input.
  - Complementing VAT reductions - targeting the Business-to-Consumer market - with Business-to-Business incentives for customers of EU chemical producers who choose circular chemical products over conventional alternatives with lower production costs.
  - The assessment of eco-modulations reducing Extended Producer Responsibility (EPR) fees for products containing a sector-specific minimum share of circular input exceeding sectoral obligations. This could take the form of a bonus system to reward above-compliance performance. The assessment should consider how eco-modulations can be aligned with the overall objective to improve the efficiency of waste management and optimise/maximise recycling (e.g., for compostable packaging).
  - The share of circular (chemical) content that qualifies for the reduced rate would need to be defined by product group and be higher than sectoral legal requirements.

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<sup>6</sup> *Product* means any physical goods that are placed on the market or put into service.

<sup>7</sup> *Product group* means a set of products that serve similar purposes and are similar in terms of use, or have similar functional properties, and are similar in terms of consumer perception.

<sup>8</sup> See [Cefic's paper on market pull priorities for low-carbon and circular products](#) for further details.

<sup>9</sup> Circular products, in the context of this position paper, refer to products using circular feedstock, such as waste, biomass, and CO<sub>2</sub>-based raw materials.

- Support and incentivise selected uses of biodegradable and compostable products for specific applications (e.g., where plastics are highly food-soiled).
- Foresee the possibility of introducing other dedicated support measures for some bio-based products/product groups.
- **Set the obligation at the brand-owner/manufacturer level<sup>10</sup>**, with a consistent approach across sectors. A representation of the position in the value chain is available in Annex 1. While the obligations would be set on the brand-owners, it is key that there is a working and adapted value chain able to provide them with the necessary ingredients/raw materials to manufacture the final products.
- **Set ambitious, realistic content targets** based on a realistic assessment of feedstock availability, technology readiness, economic, and environmental feasibility.
  - Initial targets should be based on current market data and accounting for product specificities, also evaluating the current use of biomass in each product or product group to ensure that targets exceed existing levels and genuinely promote increased adoption. Product groups widely differ from each other and can therefore present different levels of biogenic carbon content (either bio-based or bio-attributed). Even within a single category, different ingredients for the same purpose may have different levels of biogenic carbon due to factors like the presence of inorganic molecules. Level and requirements of mandatory biomass-derived content targets can differ per sector/application or product, depending on the feasibility of a certain target within a sector/application or product group.
  - Specific attention should be paid to how the calculation at the product level should be done. In particular, aspects like the “interaction” with recycled content, in case both content targets are present, should be considered.
- **Increase targets over time.** A clear and realistic trajectory with both short-term and long-term targets, including intermediate steps, avoids market stop-start effects and supports timely capacity build-out. A trajectory enables predictable regulatory development and is better for market behavior than relying on frequent legislative reviews. Similar mechanisms could also be considered for other circular carbon sources.
  - A trajectory would entail:
    - A continuous ramp-up over time.
    - Intermediate milestones.
  - Reviews of the trajectory should be intended for checking whether the slope of the progression should be increased, if the market is evolving faster than expected. Such reviews should not allow for the removal of established targets or the elimination of intermediate steps.
  - A regular review of the possibility of including additional product groups/products should also be included.
- **Add safeguards and flexibilities.** Provide limited emergency adjustment mechanisms (e.g., in case of particular supply chain disruption situations, feedstock shortages, ...). These are also key to account for the necessity of having a working and adapted value chain, wholly contributing to the effectiveness and feasibility of biomass-derived content targets.
- **Apply the biomass-derived content targets to EU-produced and imported products alike.** Products produced outside the EU should also comply with this obligation to ensure a level playing field for all

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<sup>10</sup> A brand owner is the entity that owns the brand/trademark of a product and that holds ultimate control over the product formulation and choice of its ingredients/components, even if they may not physically manufacture the goods. Brand owner is closely linked to the definition of manufacturer within ESPR: manufacturer means any natural or legal person that manufactures a product, or that has a product designed or manufactured, and markets that product under their name or trademark.

producers. Otherwise, the risk of producers going abroad is very high. Products subjected to targets handled by importers and distributors, in particular, should also comply with the target requirements.

## Fast implementation: which EU policy instrument?

Cefic has repeatedly stressed the urgency of demand-side measures to unlock investments that are necessary to drive the competitiveness of the EU industry and provide the necessary business certainty. It is therefore not an option to take several years to develop and propose content targets for biomass-derived products.

Cefic, therefore, calls for the following policy approach:

- **Build on existing EU legislation and priorities.** Where feasible, the Commission should consider integrating biomass-derived content targets into existing legislation.
- **Use ESPR now** to set Ecodesign requirements (Art. 5) on the use/content of sustainable renewable materials by product or product group not covered by existing policies, possibly via dedicated delegated acts, and where possible, covering multiple product groups in parallel.
  - The ESPR is an existing framework, which means that action can move forward without a lengthy legislative process. Making full use of the ESPR avoids the development of parallel frameworks, which adds complexity and risks creating fragmentation.
  - **Define “sustainable renewable materials”** within ESPR in line with Cefic’s biomass-derived products definition<sup>11</sup> (incl. bio-based and bio-attributed), and ensure consistency with other legislative frameworks related to the same concepts, such as the recently published Industrial Accelerator Act (IAA). The use or content of sustainable renewable material is currently listed as a product parameter in ESPR Annex I.
  - **Define “sustainable” biomass sourcing**, taking inspiration from RED III Article 29(2–7). The text under RED III Art 29(2-7) should be used as a basis and adapted to address product applications instead of energy applications.
- **Use the upcoming Biotech Act II** to accelerate implementation, to harmonize the policy framework covering content targets, and introduce appropriate amendments as required:
  - **Consider the review of ESPR** to reach a harmonized framework (e.g., introducing definitions such as for sustainable renewable materials proposed above).
  - **Consider the possibility of a dedicated delegated act on biomass-derived content targets at the end-product level in the ESPR working plan**, notwithstanding the importance of maintaining legal certainty within ESPR and with due consideration for broader impacts of such a proposal.
  - **Consider the possibility of covering ESPR gaps via targeted amendments** to sectoral legislation (e.g., for medical devices).
  - **Accelerate the introduction of biomass-derived content targets** in policies with currently foreseen very long timelines, like ELVR.

With a rapid implementation route identified, the next step is to prioritise where biomass-derived content targets can deliver the greatest market pull and administrative efficiency in the first wave.

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<sup>11</sup> Ibid 1 and see also within [Cefic’s position paper about integrating Bioeconomy & Biotech Act II](#)

## First-wave prioritisation: sectors and product groups

To help drive a market pull for biomass-derived material, key sectors for introducing biomass-derived content targets should be prioritised, considering at least where there is a significant market share for chemicals in end-products and existing review clauses in EU legislation.

Priority product groups for the introduction of biomass-derived content targets should be identified, keeping the following in mind:

- **Target end markets with high-volume and high-value chemical uses.** Focus first on where market pull, and administrative efficiency are highest (e.g., packaging represents ~40% of plastics use<sup>12</sup>).
- **Cover multiple sectors.** As the “industry of industries”, the chemical industry produces more than 70.000 different products, which are involved in most manufactured goods, and supplies more than 15 industrial sectors. To create a meaningful market pull, as many products/product groups as possible should be covered. Input costs usually make up a small part of final product prices, so higher producer costs from sustainable production tend to cause only minor price increases for end products, as studies like Deloitte’s *Mobilizing Demand for Sustainable Investments* show. Measures that only target individual outlet markets are insufficient to support the sector’s transition and competitiveness at scale.

Cefic identified the following product groups as potentially relevant for first biomass-derived content targets introduction.

Product group	Application	Products
Packaging	Plastic Packaging	E.g., food & beverage packaging (including biodegradable and compostable)
Building & Construction	Plastic building & construction products	Building Envelope & Finishing: doors, windows, shutters, gates
		Insulation & Materials: Thermal insulation products and acoustic materials
		Floorings & Finishes: floorings, ceiling finishes
		Electrical: communication cables
Automotive	Plastic automotive parts	
Agriculture	Plastic agriculture products	E.g., mulch films
Home care	Detergents	
	Surfactants	
Personal care	Toiletries, hygiene (excl. coloring cosmetics such as makeup, hair color/hair texturing/styling products; anti perspirant/deodorant and suncare), and grooming	
Healthcare products	Consumables/Single use	
Textiles	Garments	
	Carpets	
	Footwear	
Paints		
Adhesives		

<sup>12</sup> See Annex 2

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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.

## Annex 1 – Value chain representation<sup>13</sup>

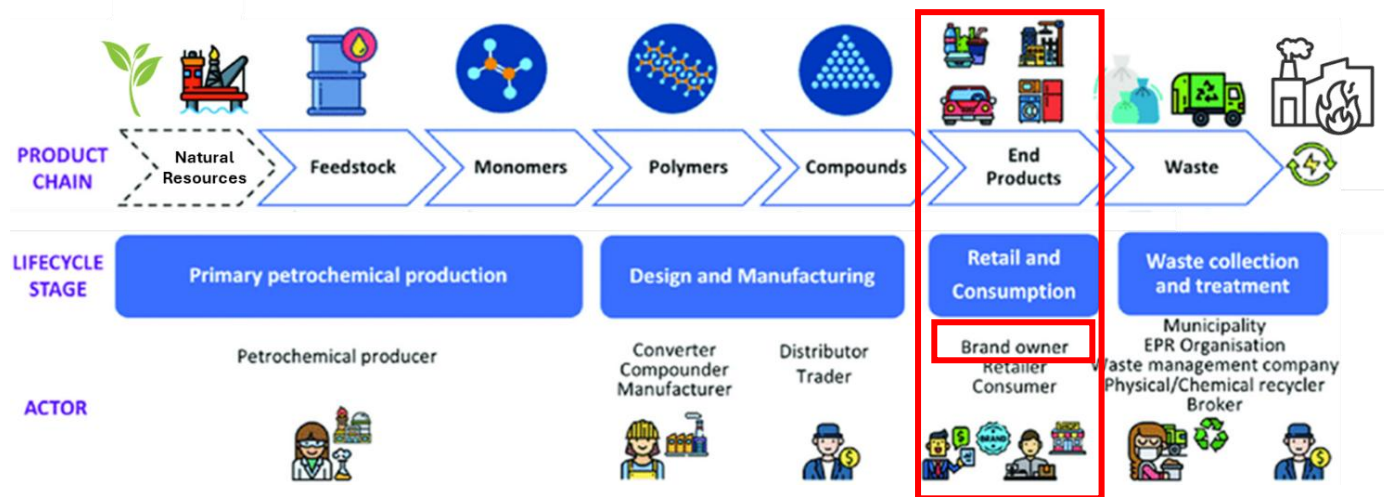


Figure 1 – Illustration of value chain steps for the case of the manufacturing of plastics. The red square indicates the proposed location for setting the targets.

<sup>13</sup> Adapted from Hsu, Wan-Ting & Domenech, Teresa & Mcdowall, William. (2022). Closing the loop on plastics in Europe: The role of data, information and knowledge. Sustainable Production and Consumption. 33. 10.1016/j.spc.2022.08.019.

## Annex 2 – Representative data for selected applications/end-markets

### European plastic conversion by application

In 2022, packaging as well as building and construction applications represented by far the largest end-use markets for plastics in the EU27+3. The third biggest end-use market was the automotive sector.

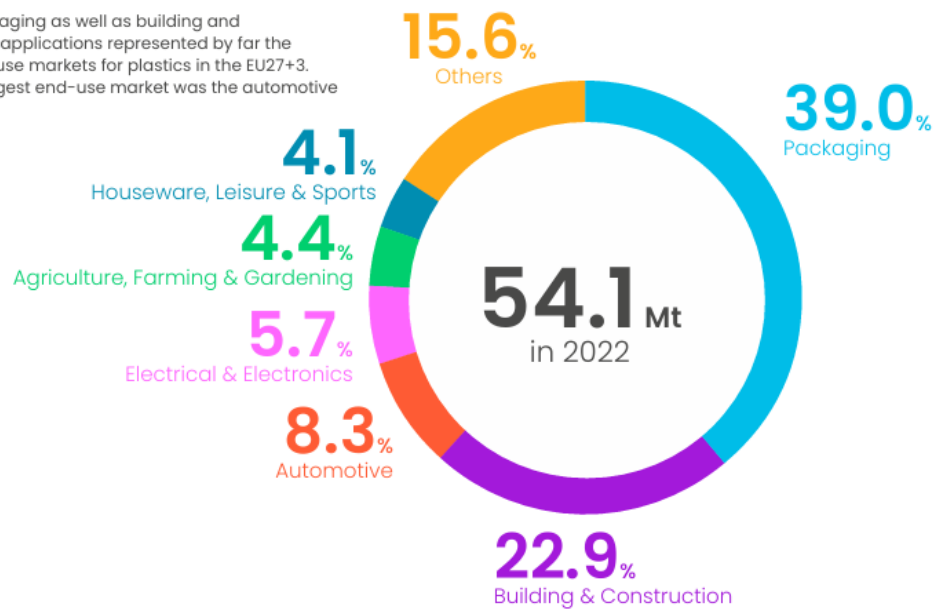


Figure 2 – Share of plastic use by application within the EU. Image from [Plastics Europe – The circular economy for plastics](#)

### Influence of including the cost of low-carbon production in the price of the end products

Table 1 – Potential price increase of selected products if sustainable materials are used. From Deloitte's [Mobilizing consumer demand for sustainable investments](#)

	End-markets	End-products	Example used	Price increase from sustainable solution				
				Current price	Of which input cost	Input cost increase <sup>1</sup>	Price increase (one-off)	
Steel	Construction	House (foundation, beams, ...)	185 m <sup>2</sup> house	€500,000	€1,601	+137% BF-BOF (ETS €75) vs. DRI-EAF (Green H <sub>2</sub> )	0.2%	
		Wind turbine	5MW offshore turbine	€3,000,000	€88,200		4.2%	
	Automotive	Car (chassis, engine, ...)	Toyota Aygo X	€27,500	€198		0.7%	
		Truck (chassis, engine, ...)	MAN TGS 33.480 6x6	€150,000	€1,323		0.8%	
	Groceries	Steel canned tomatoes	Supermarket house brand	€0.69	€0.03		6.7%	
White goods	Fridge	300l fridge freezer comb.	€700	€23	3.7%			
		Fertilizers	Tomatoes (fresh)	1 kg Roma house brand	€3.67	€0.01	+244% SMR (ETS €75) vs. SMR (Green H <sub>2</sub> )	0.3%
			Fries (frozen)	1 kg house brand	€1.79	€0.004		0.5%
Bread	Entire whole-wheat bread	€1.75	€0.01	1.8%				
Chemicals	Groceries	Water (plastic bottle)	330ml house brand	€0.890	€0.02	+66% Cracker (ETS €75) vs. Cracker (bio-based or pyrolysis oil)	1.8%	
		Shampoo (bottle and content)	300ml bottle	€2.75	€0.12		2.7%	
	Automotive	Car (interior, electronics, ...)	Toyota Aygo X	€27,500	€272		0.6%	
		Truck (interior, electronics, ...)	MAN TGS 33.480 6x6	€150,000	€778		0.3%	
Construction	House (PVC, ...)	185 m <sup>2</sup> house	€500,000	€6,045	0.7%			
Refining	Transport	Parcel delivery (diesel)	Last-mile delivery	€3	€0.06	+7% Refining (ETS €75) vs. Refining (CCS + Green H <sub>2</sub> )	0.1%	
		Flight (kerosene)	Direct AMS – JFK	€500	€89		1.3%	
	Construction	Shipping (heavy fuel oil)	1TEU SHG – RTM	€4,000	€439		0.8%	
		Highway (bitumen)	1km ZOAB highway	€20,000,000	€180,000		0.1%	
References		House (roofing bitumen)	185 m <sup>2</sup> house	€500,000	€38		0.0%	
	Average VAT EU						21.8%	
	Total inflation EU '15 – '24 (average annual 2.7%)						30.2%	