EEB response to the public consultation on the Bioeconomy strategy

The European Environmental Bureau is supportive of bringing together the concepts of circular, bio and regenerative economies, as mentioned in the title of the bioeconomy initiative. If these are defined to their fullest conceptual potential, this could put us on a transformative path towards living well within planetary boundaries. However, as the appetite for biomass is bigger than the availability, and we cannot in a Paris Agreement-compatible scenario increase the amount of land made available to the bioeconomy, the initiative must focus on improving the *value* rather than the *volume* of biomass. This will steer us away from an extraction-oriented, mostly linear approach to the bioeconomy.

We are still underperforming for most targets indicated in the 8th Environmental Action Plan, including for biodiversity and ecosystems protection and circular materials use rate. With the status quo bioeconomy, direct energy purposes compete with material purposes, and we are neglecting services provided by ecosystems. There is indeed a need, as the initiative states, to "transform how we value and use biomass resources, prioritising extended high-value applications while encouraging industries and consumers to embrace circular practices that maximise economic returns from each unit of biomass".

The objective of "promoting a European bioeconomy" should therefore not lead to regrettable like-for-like substitutions from single-use or short-term recyclable fossil to biomaterials (instead of prioritising refusal/reuse), an extension of unsustainable agricultural practices, watering down of recycling/recycled content/reuse targets through lack of specificity, indiscriminate endorsement of carbon capture and use, or a get-out-of-jail free card for bio-based products to claim "toxic-free" or "sustainable" without evidence.

As the call for evidence rightly points out, a circular, regenerative bioeconomy is a complex end goal needing careful policy consideration. Resource efficiency, circularity, sustainable supply of biomass, and achievement of other priorities for land-use, such as nature restoration, are key baseline conditions that we are currently falling behind on. We cannot therefore grow the market and scale up while "avoiding further biodiversity loss" – we need to first operate within planetary boundaries, restore our ecosystems and then consider strategies to improve the value of available biomass.

Overarching objective: Resource governance

It is no secret that Europeans are using resources far beyond what the planet can sustain. Each year, our Earth overshoot day moves closer and closer to the beginning of the year. The global circularity rate continues to drop year-on-year and is now below 7%. The EU needs to reduce its overall material footprint and put circularity, resource efficiency and sufficiency at the heart of the bioeconomy.

The phaseout of fossil fuels and fossil-based materials remains an absolute priority. However, a one for one substitution of fossil-based materials with renewable resources is not mathematically or biophysically possible. According to data from Wageningen university, biomass demand is expected to grow by up to 45% by 2050, with fuel, non-food materials/chemicals and paper/board expected to grow the fastest, while animal feed (and bedding) consume the lion's share of both current and future demand (38% of biomass use in 2022 according to JRC figures). Any encouragement towards the use of biomaterials that causes our overall resource footprint to increase or remain stable would therefore be missing the mark.
The Bioeconomy Strategy should seek to bring the EU's total biomass supply and use (territorial and imported) within a safe operating space. This requires addressing the overextraction of biomass for

energy, and a just transition in the livestock sector to bring animal numbers within the ecological carrying capacity of land in all regions as part of circular systems; while promoting a shift to healthier and sustainable diets.

In order to be able to substitute away from fossil sources, a helpful place to start would be to eliminate fossil fuel subsidies and other financial instruments encouraging extraction of non-renewable resources. Where consumption patterns cannot be transformed to completely prevent virgin materials, sustainably sourced biomass should be used in the highest-value application possible, according to a hierarchy of biomass use. Within this hierarchy, value should be defined as public good first. The use of biomaterials to benefit biodiversity, soil health, water management and climate adaptation will without a doubt give back the highest long-term value to society, but this will not automatically be rewarded by the marketplace and is therefore not something the market can achieve on its own.

Adequately defining biomass sources

As stated above, the availability of sustainable biomass cannot cover all potential demands in the current state of systemic overconsumption. When considering the supply of biomass to provide feedstock towards the circular bioeconomy, clear distinctions should be made between new/virgin biomass; recovered biomass; by-products and waste. Targets on "bio OR recycled" will not lead to the right market incentives, and targets on bio-based alone have led to disastrous consequences for the ecosystem when applied to energy in previous policies. If considered, bio-based targets would need to be very specific about the source and narrowly defined within sectors where there is no risk of targets leading to overextraction.

Use of a "bio" waste or byproduct can encourage increased production of the product they stem from or lock in unsustainable production models – a matter that should be taken into account before encouraging incentives for waste-based biomaterials. This is the case for example with the promotion of biogas production from industrial livestock manure. The current classification of animal manure as a "waste" feedstock under the Renewable Energy Directive assumes no environmental impacts in its creation and collection. This means that when assessing the environmental benefit of a biogas project, the harmful impacts of industrial animal rearing and feed production are overlooked, despite being well documented and substantial. Manure should instead be considered a by-product and its full life-cycle impacts should be accounted for.

Despite some organisations advocating for carbon capture and use (CCU) as part of the bioeconomy, it should be assessed separately and not considered at the same basis as biomass that has been grown in nature. If used, it should be seen as an absolute last resort, with critical evaluation of whether the base product that caused the emissions is needed in the first place, as well as the energy/resources needed to capture and transform the emissions into useful products.

From lab to fab, "scaling up", positioning the EU in the international market

Scaling up, innovation, and EU competitiveness are not goals to be met outside of context – they only become relevant if resource efficiency, circularity and conditions for sustainable supply of biomass have been met.

Imports of biomass from the Global South are a cornerstone of raw material supply in many bioeconomy scenarios, but this is highly problematic and unfair. Industrial agriculture and forestry are already displacing and exploiting indigenous and local communities in the affected countries, as well as destroying critical natural habitats. An increase in biomass demand would exacerbate these problems.

Resource grabbing and land grabbing risk from offsetting in the global South is continuously evidenced. Imported biomass, including animal feed, should adhere to the same sustainability requirements as locally produced materials and should internalise externalities such as transport footprints. Upscaling of biomethane production from manure extends the EU's dependence on unsustainable livestock farming reliant on long supply chains and import of protein feed, replacing a gas dependency with an animal feed dependency sourced from other countries. The EU must therefore strengthen its due diligence frameworks to ensure that negative biodiversity and social impacts are excluded from our supply chains.

Establishing a biomass use hierarchy

We understand the inherent complexity in defining a cascading principle for the bioeconomy, given the large variety in feedstock, product categories and outcomes. However, the use of biomass is mistakenly rated climate neutral in current EU policy which leads to exaggerated incentives to use biomass, also for the generation of energy.

We believe that the following hierarchy of guiding principles, inspired by the circular hierarchy of action, should underpin decisions as to whether certain actions should be encouraged or not. We will continue to contribute depth to this hierarchy as the work with the bioeconomy strategy continues.

1. Restore nature first: Protect ecosystem services and ensure long-term health for soil, water and biodiversity.
2. Refuse exploitation and over-extraction: Apply sufficiency principles.
3. Rethink land use: Food for direct human consumption and long-lasting products should be the priority, and land for wind and solar should be considered where that could be the better option.
4. Resource efficiency: Ensure that products and biomass have been valorised to their highest public good potential and with the longest life spans.
5. Recycling end-of-life waste products, gases, and the capture of biogenic carbon: Strengthen separate collection, avoid the release of harmful chemicals, consider all energy and resource opportunity costs in the manufacturing process.

Conclusion

Phasing out fossil fuels and reducing fossil-based products remains a key lever towards mitigating the planetary poly-crises of climate, biodiversity, pollution, security and resilience. There is indeed great innovation potential and many positives to find in optimising the use of bio-resources. The EU framework for funding is an important enabler in this context and should prioritise innovations that lead to more long-term multiple-use products, for example by changing byproduct infrastructure to privilege long-lasting products over short term products.

However, simply switching from fossil to bio while maintaining the current consumption and resource-use patterns will not solve the problem. We need systemic change across all sectors, from adapting the food we eat, to reducing the amount of energy and products we consume.

The bioeconomy strategy should strive to first restore nature and improve biodiversity and soil health, and to enable food security. If bio-based materials are used in products, it should be within an overall resource reduction framing, prioritise long-lasting applications, and remain free from harmful chemicals. Short-lived products should be rethought and not promoted. And all applications of waste and by-products should be carefully considered in terms of energy and resource opportunity costs.