

Towards a more circular bioeconomy

Taking full advantage of secondary raw material streams

The bioeconomy is becoming increasingly important to reach the European Union's Green Deal targets and strengthen Europe's competitiveness. The European Council emphasized the bioeconomy's importance for the circular economy in its Strategic Agenda 2024-2029. In her political guidelines, Commission President von der Leyen announced her intention to create market demand for secondary raw materials and an internal market for waste, notably in relation to critical raw materials. In this paper, Baden-Württemberg and the Dutch provinces follow up on these demands with concrete recommendations and ask the European Commission to strengthen reusing secondary raw materials in the bioeconomy when revising the European Bioeconomy Strategy in 2025.

What we recommend :

- ✓ Ensure the full potential of the circular bioeconomy beyond primary biomass for the extraction of raw materials, especially critical raw materials. To this end, secondary raw material flows such as wastewater, waste (including non-biogenic waste) and exhaust air must be addressed in the sustainable bioeconomy and biotechnology.
- ✓ Consider urban areas as well as regions and municipalities as administrative areas for secondary raw material flows.
- ✓ Examine a harmonised, substance- and sector-based approach to end-of-waste legislation with clear regulations and procedures to obtain end-of-waste status for resources recovered from sewage, waste and exhaust air including a standard procedure and a uniform structure of the application file.
- ✓ Examine ways to promote the market uptake of sustainable bioeconomy products through improved EU measures and legislation.

Acceleration needed to achieve ambition

Although the world has made encouraging progress in implementing the 2030 Agenda for Sustainable Development, none of the European countries are on track for meeting the goals. This applies in particular to SDG 12 "Ensure sustainable consumption and production patterns". Too often, initiatives to recover valuable resources from sewage, waste and exhaust air remain in the study and development phase for long periods of time, due to implementation risks and limited market opportunities. Technology implementation risks are implicitly associated with technology development and thus, the common idea is that the market will deal with them. However, market development and applicability of a recovered resource depend on factors far beyond the control of chain partners involved. Uncertainty therefore inhibits development and implementation.

This position paper aims to contribute to accelerating the circular use of valuable resources from secondary raw material sources. We suggest that the Commission, together with stakeholders, regions and Member States, identify possible legal barriers and examine harmonised approaches. As part of the revision of the bioeconomy strategy, we would like the Commission to also consider ways of promoting market introduction of these circular economy products through improved EU measures and EU legislation.

Towards a revision of the EU bioeconomy strategy

The European Commission has announced that it will review the EU bioeconomy strategy by the end of 2025. The sustainable bioeconomy has a high priority in our regions. We promote the sector as part of our own regional strategies and thus convincingly contribute to the implementation of the EU bioeconomy strategy.

Part of our efforts regarding the bioeconomy is the use of secondary raw materials sources such as sewage, waste and exhaust air. Particularly in urban and industrial areas, large mass flows of waste and wastewater are generated. We are able to extract raw materials from these material streams - often using biotechnological processes - and thus contribute to a sustainable circular economy. Not only bio-based, but also non-bio-based waste is used for this. Numerous innovative projects in our regions have proven to be extremely promising. They have the potential to reach market maturity and thus contribute to a more resilient supply and demand of raw materials and protect the environment from pollution. This results in a win-win situation for our economy, our environment and our climate and reduces the dependency of critical raw materials

When revising the EU bioeconomy strategy, we would like to see broader consideration given to circular principles and therefore consideration to substrates for the bioeconomy beyond biomass and especially to the use of secondary raw material sources. This expansion of raw material sources for the bioeconomy also contributes to the supply of critical raw materials, for example through the biotechnological treatment of electronic waste. These raw material sources occur in larger quantities in urban areas, which is why greater consideration of secondary raw materials should also go hand in hand with consideration of urban areas in the EU bioeconomy strategy. This includes the fact that the collection and treatment of these secondary raw material streams is the responsibility of the regions and municipalities in most EU Member States.

Removing legal hurdles, creating opportunities.

We have encountered legal obstacles originating in EU law¹ while working on bioeconomy projects in our regions that utilise waste streams. Current legislation and associated procedures delay implementation of innovative technology to recover valuable raw materials from sewage and waste. This leads to unnecessarily high costs, resulting in the loss of endless streams of raw materials that could be converted into (bio-based) products, materials and/or energy at a time when we are facing climate change due to increasing CO₂ emissions and more waste causing pollution. In addition to the aforementioned, differences in rules and procedures also create significant differences in the use of renewable resources between member states or, in some cases, even unwanted and unnecessary additional emissions. Further harmonisation at EU level is therefore necessary.

Legislation regarding the use of recycled raw materials (from waste) exists to protect people and the environment against possible harmful consequences due to pollution. Changes in legislation should not mean that concessions are made. The precaution principle is therefore key and is not to be compromised. Consumer safety and environmental safety are a priority. But we must also ensure that legislation does not hamper the implementation of new innovative technology and the necessary reuse of recovered materials. The procedure for applying for an end-of-waste status differs from Member State to Member State and sometimes from region to region and the way the assessment of potential risks is carried out is sometimes unclear and can differ significantly as well. For example, an application in a Member State is currently being assessed against all assessment criteria as if it were a new application, even if it was already approved in another member State. A previously submitted application is not taken into account. The result is that a lot of duplication of work is done, which not only leads to significant delays, but also to considerable costs. When setting up EU solutions, established procedures in the Member States should therefore be taken into account.

¹ Among others the End of Waste legislation