

Implementation of the Net-Zero Industry Act

EuropaBio comments on the list of net-zero technology final products and their main specific components

EuropaBio, the industry association for biotechnology in Europe, welcomes the opportunity to comment on the Implementing Act on the list of net-zero technology final products and main specific components.

We fully support the inclusion of microorganisms and enzymes in both final products and as main specific components under Biotech Climate and Energy Solutions. Industrial biotechnology and biomanufacturing are substantial contributors to net-zero, for example, by replacing a non-renewable resource by a bio-based resource and/or by using techniques such as fermentation which are generally less energy-intensive than conventional processes. An example is the production of vitamin B2, which reduces the use of fossil raw materials by 70% and wastewater by 65%, while reducing production costs by 40%. Other examples include the use of enzymes to replace chlorine in paper bleaching which reduces energy needs by 40% or in detergents to allow the use of lower temperatures during laundry and consequently a reduction of electricity use by 30%.

An important consideration for Biotech climate and energy solutions is the feedstock used in the process. Biomanufacturing processes using microorganisms and enzymes (in scope of the NZIA) can use biogenic carbon as well as recycled carbon and carbon capture and use (CCU, also falling in scope of the NZIA). The list of final products and main specific components currently only captures biogenic feedstock for biotech climate and energy solutions. This should be expanded to reflect additional sources of carbon that support the overall defossilisation of EU industry.

We would therefore like to submit some specific comments to further clarify and strengthen the criteria for final products and main specific components under Biotech climate and energy solutions. Please see below and attached in Annex.

- 'methanogens' should be replaced by Archaea, to be consistent with the other broad classifications of microorganisms.
- 'microbial strains' is a descriptor of specific lineages of microorganisms. It would be more accurate to either delete this, or move outside of the parenthesis i.e. "Microorganisms and microbial strains (such as bacteria, yeasts, ...)"
- Biopolymers and recycled carbon fuels, recycled carbon chemicals, and renewable fuels produced by fermentation using recycled or non-organic carbon sources should be added alongside biofuels, bio-based chemicals, bio-based materials and bio-based products: "convert feedstock into biofuels, recycled carbon fuels and renewable fuels,

bio-based and recycled carbon chemicals, biopolymers, bio-based materials, and bio-based products.”

- Specific examples are outlined for enzymes (amylase and cellulase). We understand that this is to provide examples without introducing limitations through a prescriptive list, which would not be future proof. We suggest amending the text accordingly to read “Enzymes (including but not limited to amylase and cellulase)”.

Annex 1: EuropaBio proposed amendments to the list of net-zero technology final products and their main specific components

Sub-categories of net-zero technologies	Final products	Main specific components
Biotech climate and energy solutions	<p>Microorganisms (such as bacteria, yeasts, microalgae, fungi, microbial strains and archaea methanogens) that are used to pretreat and convert feedstock into biofuels, recycled carbon fuels and renewable fuels, biobased and recycled carbon chemicals, biopolymers, biobased materials, and bio-based products.</p> <p>Enzymes (such as including but not limited to amylase and cellulase) that are used to pretreat and convert feedstock into biofuels, biobased chemicals, biobased materials and bio-based products.</p>	<p>Microorganisms (such as bacteria, yeasts, microalgae, fungi, microbial strains and archaea methanogens) that are used to pretreat and convert feedstock into biofuels, recycled carbon fuels and renewable fuels, biobased and recycled carbon chemicals, biopolymers, biobased materials, and bio-based products.</p> <p>Enzymes (such as including but not limited to amylase and cellulase) that are used to pretreat and convert feedstock into biofuels, biobased chemicals, biobased materials and bio-based products.</p>