

To the European Commission, DG Environment

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Object: EU End-of-Waste status for the value chain Food, water & nutrients

We understand that the European Commission is assessing opportunities for development of EU End-of-Waste rules for a number of waste streams, as announced in the Circular Economy Action Plan (CEAP)ⁱ. The CEAP designates (\$3.7) “Food water and nutrients” as a key product value chain.

In the context of the Green Deal, the Commission is taking forward the Bioeconomy Strategyⁱⁱ, sustainable aquacultureⁱⁱⁱ and the Algae Initiative^{iv}. At the same time, the Farm-to-Fork and Biodiversity strategies fix the target to reduce nutrient losses by 50% by 2030, leading to a reduction in organic and mineral fertiliser use of -20%, and phosphate rock was confirmed on the EU Critical Raw Material List^v in 2020. These different objectives can be brought together if valorisation of secondary resources and materials from wastewaters is accelerated. Large-scale biomass and algae production should benefit from secondary nutrients and include nutrient recycling in processing^{vi}.

The signatories therefore request that the European Commission **include wastewater treatment in the waste streams assessed for scope of development of EU End-of-Waste Criteria** under the Circular Economy Action Plan (including wastewater-fed algae & biomass production).

We fully recognise that wastewaters may contain a wide range of contaminants and pathogens, and **it is essential to ensure safety of recovered materials**. In particular, municipal and industrial wastewater treatment sludges should retain waste status, to ensure traceability and monitoring, unless they have undergone processing to a product with consistent quality and safety characteristics and a market for use.

The Waste Framework Directive 2008/98 specifies that End-of-Waste criteria are related to market and use of the recovered material. **We therefore suggest that the Commission specifically assess scope for EU End-of-Waste criteria for the following streams** [in all cases, see note below concerning use in fertilising products]:

- **Algal, microbial or plant biomass grown in or using wastewater streams** or other waste inputs (including biomass recovered from e.g. eutrophic surface waters) and materials processed or extracted from such biomass, e.g. microbial protein. In addition to waste waters, other waste streams used to “feed” algae or biomass production can include offgases such as: carbon dioxide (CO₂ capture); ammonia gas (“stripped” from wastewater treatment, sludge digestion); NO_x from sludge incineration Different specific uses should be addressed subject to safety: [fertilising products^{vii}], animal and aquaculture feed^{viii}, human food, cosmetics, biofuels, other industrial applications.
- **Bio-based fibres, polymers, fatty acids, proteins and gums** extracted from wastewater, for use in industrial applications (e.g. bio-plastics) or non-fertilising agricultural applications (e.g. films): e.g. EPS (extracellular polymeric substances), alginic acid, cellulose, sericin protein, chitin, polyhydroxyalkanoates (PHA)^{ix}, bio-bitumen, long-chain hydrocarbons ...
- **Nitrogen or sulphur compounds recovered from gas treatment** (e.g. ammonia salts or ammonia solution from offgases or from gas released by “stripping”) in wastewater or sludge treatment, biomass, manure or digestate processing or storage^x, for use in industrial and energy applications (placing on the market as commodity nitrogen or sulphur chemicals).

- Nitrogen, phosphate, potassium or other ions or compounds recovered from the liquid phase of waste waters **using membranes or ion exchange, for use in industrial applications.**
- **Precipitated phosphate salts and other minerals for industrial applications**, e.g. use of struvite or iron phosphates for fire safety treatment, iron/aluminium compounds for reuse as coagulants/adsorbents ...
- **Fat, grease, oil materials**, for direct combustion or use in bio-fuel production
- **Grit and sand** used in manufacturing of building materials
- **CO₂** (liquefied or gas), from the production of biomethane out of biogas, for use in industrial applications, in crop production (e.g. glass houses), in human food or beverages, in drinking water production [CO₂ used to feed biomass production in CO₂-capture systems may retain waste status]

For all the above, we suggest to **limit to (a) waste streams resulting from treatment of municipal sewage, biomass, food-waste or animal by-products and (b) waste gases (or materials recovered from waste gases) used to feed algae and biomass production**, in order to avoid the wide range of possible contaminants and risks of industrial waste waters and waste gases.

For (a), we suggest to base on the list of inputs specified in the EU Fertilising Products Regulation STRUBIAS phosphate salts criteria:

- Municipal wastewater and sewage sludge
- Cat 2 and 3 animal by products (this includes manures), subject to an ABP End Point
- Wastewaters from processing of foods, beverages, pet foods, animal feeds, or dairy products
- Liquors from separately collected food waste
- Biofuel processing wastewaters
- Liquors from mechanically processed plant biomass

plus additionally, for clarification

- Composts and digestates of the above
- Insect and fish/aquaculture production wastewater (currently not clearly covered as ABPs)

Fertilising products: we do not here cover fertilising products, as EU End-of-Waste status for such applications is addressed by the new EU Fertilising Products Regulation 2019/1009 (FPR)^{xi}. A number of materials recovered from waste waters are today not covered by current FPR “CMC” categories or STRUBIAS, and should be considered for addition into the FPR.

Treated wastewater: we do not here cover reclaimed wastewater (i.e. treated, purified water), in that this is addressed by the Water Reuse Regulation 2020/747. A number of uses are however not yet today covered by this Regulation and should be assessed: ground water recharge (currently under consideration), industry process water, glass houses, parks and sports grounds,

The signatory organisations (contacts below) request to discuss further with the European Commission how to appropriately target a scoping assessment on EU End-of-Waste for wastewater derived biomass and materials, and what further information would be relevant on current production and potential, markets and uses, processes, contaminants and safety, or other questions you may have.

We look forward to hearing from you (coordination contact email: info@phosphorusplatform.eu)

ⁱ COM(2020)98, 11/3/2020, <https://ec.europa.eu/environment/circular-economy/> A new Circular Economy Action Plan for a cleaner and more competitive Europe, §4.3: “assess the scope to develop further EU-wide end-of-waste criteria for certain waste streams based on monitoring Member States’ application of the revised rules on end-of-waste status and by-products, and support cross-border initiatives for cooperation to harmonise national end-of-waste and by-product criteria”.

ⁱⁱ https://ec.europa.eu/info/research-and-innovation/research-area/bioeconomy/bioeconomy-strategy_en

ⁱⁱⁱ https://ec.europa.eu/fisheries/cfp/aquaculture_en

^{iv} The conclusions of the recently closed public consultation on the Algae Initiative identify the need to improve the regulatory framework: https://ec.europa.eu/maritimeaffairs/press/towards-strong-and-sustainable-eu-algae-sector---conclusions-public-consultation_en

^v <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0474>

^{vi} See US NAS report on biofuels www.phosphorusplatform.eu/Scope090

^{vii} EU End-of-Waste status for waste-fed algae and biomass (meeting specified conditions) would enable appropriate use in CMC1 of the EU Fertilising Products Regulation 2019/1009.

^{viii} Parallel to clarification of implementation of Annex III, point 5, of the Animal Feed Regulation 767/2009

^{ix} Polyhydroxyalkanoates: see EU Horizon 2020 project RES URBIS <https://www.resurbis.eu/>

^x It may be useful to refer to the definition of materials recovered from gases for use in fertilising products, in the possible future « CMC-WW » currently under discussion for the EU Fertilising Products Regulation.

^{xi} https://ec.europa.eu/growth/sectors/chemicals/specific-chemicals_en

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