

ESPP input to EU public consultation on Taxonomy (sustainable finance criteria)

3rd May 2023

Consultation website:

https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13237-Sustainable-investment-EU-environmental-taxonomy_en

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Comment:

Annex II – 2.1

TYPE OF RESPONDENT: Non-governmental organisation (NGO)	TRANSPARENCY REGISTER NUMBER: 260483415852-40
COUNTRY: EU	SECTOR OF ACTIVITY: Professional, scientific and technical activities
ORGANISATION: ESPP (European Sustainable Phosphorus Platform)	ORGANISATION SIZE: Micro (< 10 employees)
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COMMENT

Delegated Act: Taxonomy Environmental Delegated Act

Annex: Annex II to Environmental Delegated Act (CE)

ACTIVITY

Annex II – 2.1 “Phosphorus recovery from waste water”

ESPP welcomes the inclusion of phosphorus recovery in the proposed Taxonomy environmental criteria (Annex II, contribution to the circular economy, §2.1).

ESPP however regrets that **recovery of nitrogen** is not included (this is not coherent with proposed art. 20 of the revision of the Urban Waste Water Treatment Directive currently under discussion) and that **recovery is limited only to waste water, so excluding** e.g. recovery from manure, digestate, food waste, animal by products ...

ESPP also considers that the **proposed wording would inappropriately exclude some recovery routes and processes**, and we propose adjustments in wording to ensure technology neutrality and improve clarity.

ESPP welcomes that it is specified that the recovered phosphorus must have a market, i.e. be used in a fertilising product (compliant with EU or national fertiliser regulations) or in another functional application. We suggest that it be clarified that, for in a “fertilising product”, that phosphorus must be used as a fertilising nutrient (i.e. not a “soil improver”). ESPP welcomes that respect of fertiliser or other relevant regulations is specified, as this is important to ensure health and environmental protection and so farmer and consumer confidence in safety of recycling.

1) RECOVERY OF NITROGEN

The inclusion of phosphate recovery is coherent with the inclusion of Phosphate Rock and Phosphorus in the EU Critical Raw Materials List and with national legislation already in place in Germany, notified in Austria and objectives fixed in the HELCOM States.

However, the Green Deal nutrient loss reduction objectives, the inclusion of secondary materials in the EU Fertilising Products Regulation, the EU Circular Economy Action Plan and the proposal to enable definition of phosphorus and nitrogen recovery targets in the recast of the Urban Waste Water Treatment Directive (underway) all **concern both phosphorus and nitrogen**.

The **nitrogen fertiliser crisis** is underlined in the November 2022 European Commission Communication “Ensuring availability and affordability of fertilisers”, [COM\(2022\) 590](#). The Commission services (DG AGRI) have indicated that “Nitrogen recovery and recycling has an important place in this policy” (ESPP [SCOPE Newsletter n°145](#))

The United Nations Environment Assembly Resolution [UNEP/EA.5/Res.2](#) (March 2022) calls to “*accelerate actions to significantly reduce nitrogen waste globally by 2030 & beyond*” and the UN Convention on Biological Diversity (December 2022, [Target 7](#)) “*reducing excess nutrients lost to the environment by at least half including through more efficient nutrient cycling and use*”

The absence of nitrogen recovery from the Taxonomy is not coherent with these EU and UN policies.

Nitrogen recovery can also contribute to reducing nitrogen climate (NOx / N2O) and air quality emissions (ammonia: National Emissions Ceilings Directive).

For up-to-date overviews of technology implementation of nitrogen recovery and of relevant science, see ESPP SCOPE Newsletters 145 and 147 <https://phosphorusplatform.eu/scopenewsletter>

The potential for nitrogen recovery and reuse is considerable: currently 80% of reactive nitrogen is wasted ([International Nitrogen Management System](#)).

Proposed modifications:

- throughout §2.1 under Description of the activity and Substantial contribution to the transition to a circular economy, modify “*recovery of phosphorus*” or “*phosphorus recovery*” to “**recovery of phosphorus and/or nitrogen**”

- and under Substantial contribution to the transition to a circular economy, point (1), modify “*For the process integrated at the wwtp ...the phosphorus and/or nitrogen recovery process recovers at least 15% of the incoming phosphorus and/or nitrogen load*”

2) PHOSPHORUS RECOVERY FROM OTHER SECONDARY MATERIALS

Quantities of phosphorus in municipal wastewater are around ten times lower than in livestock manures. The quantity of phosphorus in biowastes and animal by-products is of the same order as in municipal wastewater. [Van Dijk et al. 2016](#).

ESPP requests that studies and concertation are engaged to extend the proposed Taxonomy activity to cover nutrient recovery from other waste streams and secondary materials, subject to the same obligation of end-use and to appropriate contaminant and sanitary safety requirements.

We suggest to modify the wording as follows:

Description of activity:

“... facilities for recovery of phosphorus from on-site waste water treatment plants (WWTP) (aqueous phase and sludge), **from digestates, from manures or of other organic wastes or by-products and from materials (i.e. ashes) or after thermal oxidation (i.e. incineration), of ~~sewage sludge~~ these organic wastes or by-products.**

Technical screening criteria

Substantial contribution to the transition to a circular economy

“1. For the process integrated at the WWTP, or into the treatment of treatment of digestate, of manure or of other organic wastes or by-products, covering mainly phosphorus salts such as struvite–magnesium ammonium phosphate ($\text{NH}_4\text{MgPO}_4 \cdot 6\text{H}_2\text{O}$), the phosphorus recovery process recovers at least 15% of the incoming phosphorus load. Only the harvested material, such as struvite, is counted for the calculation of this threshold.

2. For down-stream recovery after ~~sewage sludge~~ thermal oxidation with chemical phosphorus recovery or after ~~sewage sludge~~ thermal oxidation with thermo chemical phosphorus recovery, the process recovers at least 80% of the incoming phosphorus load from the respective input material, such as sewage sludge ash.

3) LIMITATIVE WORDING EXCLUDING CERTAIN TECHNOLOGIES

The proposed wording refers to phosphorus recovery “on-site” at the waste water treatment plant or after thermal oxidation of “sewage sludge”.

This could be interpreted to cover any waste water treatment process (that is, treating municipal sewage or treating any waste water from industry, food industry, paper industry) but NOT digestate processing or manure processing. However, the abbreviation “wwtp” used in the current text and the limitation to “sewage” sludge could also be interpreted to suggest that the text refers only to municipal waste water treatment plants. The text also appears to NOT cover sewage sludge processing other than thermal oxidation and nor thermal oxidation of other secondary materials. The wording could also be interpreted to exclude processes recovering during (as an integral part of) the thermal oxidation process (the wording currently says “after”).

If these interpretations are correct, the current wording would exclude phosphorus recovery from:

- digestate at an anaerobic digester
- sewage sludge treated (not on-site at the waste water treatment plant) by pyrolysis, hydrolysis, gasification, ...
- processing of biowaste, food waste, food industry waste (other than in a plant treating wastewater from such a process)
- thermal oxidation ash from secondary materials other than sewage sludge, such as biomass, poultry litter, animal by-products, or thermal oxidation ash from sewage sludge treatment if other materials are co-incinerated with the sewage sludge

- thermos-chemical oxidation processes where the P-recovery is an integral part of the process.

We suggest to modify the wording as follows:

Description of activity:

“... facilities for recovery of phosphorus from ~~on-site~~ waste water treatment ~~plants~~ (WWTP) (aqueous phase and sludge), ~~and from materials (i.e. ashes) at the waste water treatment plant (WWTP) or at downstream processing sites or after thermal oxidation (i.e. incineration), thermo-chemical treatment, pyrolysis or gasification~~ of sewage sludge.

Technical screening criteria

Substantial contribution to the transition to a circular economy

“1. For the process ~~integrated in the wastewater treatment at the WWTP~~, covering mainly phosphorus salts such as struvite–magnesium ammonium phosphate ($\text{NH}_4\text{MgPO}_4 \cdot 6\text{H}_2\text{O}$), the phosphorus recovery process recovers at least 15% of the incoming phosphorus load. Only the harvested material, such as struvite, is counted for the calculation of this threshold.

2. For ~~down-stream~~ recovery ~~from or~~ after sewage sludge thermal oxidation with chemical phosphorus recovery or after sewage sludge thermal oxidation, ~~thermo-chemical treatment, pyrolysis or gasification with thermo-chemical phosphorus recovery~~, the process recovers at least 80% of the incoming phosphorus load from the respective input material, such as sewage sludge ash.

4) UNCLEAR WORDING, LIMITING TO CERTAIN RECOVERED PRODUCTS

The current wording “covering mainly phosphorus salts such as struvite” could be interpreted to mean that only processes recovering principally phosphorus salts are covered. This would exclude processes recovering phosphoric acid, which is not a phosphorus salt but respects the criteria of use as a fertiliser or another functional application. If the reference to struvite is retained, then the words “~~covering mainly~~” should be replaced by “**for example recovering**”.

The emphasis on struvite is inappropriate. This is only one route to recover phosphorus, and is largely limited to certain circumstances (EBPR: enhanced biological phosphorus removal sewage works). There is no justification to emphasise this particular technology and output product.

We suggest to modify the wording as follows:

Substantial contribution to the transition to a circular economy

“1. For the process integrated.... ~~covering mainly phosphorus salts such as struvite–magnesium ammonium phosphate ($\text{NH}_4\text{MgPO}_4 \cdot 6\text{H}_2\text{O}$), only the harvested material, such as struvite~~ **having a market** is counted for the calculation of this threshold.

5) UNCLEAR WORDING CONCERNING PRODUCT USE SPECIFICATIONS

Under “Substantial contribution to the transition to a circular economy”, the current wording (point 3) states “... is used either as a component material in a fertilising product ... or in another field of application, where the recovered phosphorus fulfils specified functions”.

It is unclear whether the requirement to fulfil a specified function also applies when recovered as a fertilising product.

We suggest to modify the wording as follows:

“... is used either as a component material in a fertilising product ... or in another field of application. **In all cases**, ~~where the recovered phosphorus fulfils~~ **must fulfil** specified functions”.

Comment:

Regulation preamble - §14

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COMMENT

Delegated Act: Taxonomy Environmental Delegated Act

Regulation preamble - §14 (“Good waste management is a building block ...”)

The preamble (14) current wording states refers to recycling of metals and inorganic salts from non-hazardous waste incineration “bottom ashes”

Fly-ash from non-hazardous waste incineration often contains higher concentrations of metals and inorganic salts, and is more problematic for disposal, than bottom ash. A commercial process today exists for recovery of potassium and other mineral salts from municipal solid waste combustion fly ash (EasyMining Ash2Salt, see [ESPP eNews n°75](#)).

Also, technical processes for extracting mineral salts (including nutrient salts) from ashes may better be referred using the term “recovery” rather than “recycling” (conform to the vocabulary of REACH art. 2-7-d.

ESPP proposes the following text amendment:

*“Taking into account that materials suitable for being reintroduced into the circular economy, such as metals and inorganic salts, can be recycled **or recovered** from combustion products, in particular from bottom **and fly** ashes from non-hazardous waste incineration, the inclusion of this recycling activity and its related technical screening criteria should be considered for inclusion under the taxonomy in the next stage of development.”*

Comment:

Annex II – 2.5

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ACTIVITY

Annex II – 2.5 Recovery of bio-waste by anaerobic digestion or composting

ESPP welcomes the inclusion of Annex II §2.5 bio-waste digestion and composting, but regrets that the proposed criteria for §2.5 are not coherent with the inclusion of phosphorus recovery from wastewater under Annex II §2.1.

We suggest to add under Annex II §2.5 Description of the activity

“Nutrient recycling should be ensured. Phosphorus and nitrogen recovery should be implemented, as per the criteria of §2.1, wherever nutrients are not recycled by use of the compost or digestate as a fertiliser.”

We suggest to add under Annex II §2.5 Substantial contribution to the transition to circular economy

“3 (c) recovered phosphorus and nitrogen as per the criteria of §2.1.”