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## Events

### 10-12 June 2025, Bergen, Norway: nutrients in aquaculture and fisheries workshop

ESPP workshop, with partners in Norway and UNEP uPcycle, on nutrient management in aquaculture: fish feed, seafood processing and fish sludge valorisation, Norway & online, 10-12 June 2025, covering nutrient flows, environmental best practice, phosphorus recycling, regulatory challenges. The workshop will contribute to the United Nations (UNEP) project uPcycle, leading to a UNEP white paper on phosphorus sustainability in aquaculture. Site visits to in-sea fish farm with sludge recovery, research installations, fish sludge processing.

One or two slots are still available for presentations of fish and aquaculture industry nutrient sustainability actions, fish feed industry, fish sludge nutrient recycling. Programme, registration <https://phosphorusplatform.eu/AquacultureFisheries>

## Nutrient sustainability in livestock

### Workshop outlines key messages for UNEP white paper

ESPP - UNEP uPcycle project workshop outlines draft principles (one page) for sustainable nutrient management in livestock - open for comment. Full [workshop summary](#) including presentations by the European Commission, UNEP, FAO, industry and research. Over one hundred participants took part at this workshop, organised in Saint Malo, Brittany, and online, with TIMAC AGRO (the leading activity of the Groupe Roullier), Cooperl (the Brittany pig farmers' cooperative), ESPP, BETA Tech Center (Vic University, Spain) and CEH UK, in Saint Malo, Brittany, France, 5-7 March 2025, as part of the United Nations UNEP GEF uPcycle project. The workshop summary includes proposed Key Messages for the UNEP white paper on nutrients in livestock (one page).

ESPP SCOPE Newsletter n° 155 (18 pages), April 2025 "Phosphorus sustainability in livestock" [www.phosphorusplatform.eu/Scope155](http://www.phosphorusplatform.eu/Scope155)

Comments are welcome on these proposed Key Messages. [info@phosphorusplatform.eu](mailto:info@phosphorusplatform.eu)

## Calls

### ESPP call for consultant: feasibility of recycled P 'quotas' in fertilisers

ESPP is looking for an industry consultant or economics and market expert to outline and assess the feasibility and possible mechanisms for 'quotas' for recycled phosphorus in fertilisers (minimum recycled nutrient content requirements). The aim is to produce a 5-page brief, outlining potential approaches to defining and implementing recycled P quotas and identifying associated opportunities, challenges and possible unintended consequences. This should consider different fertiliser product categories (including both mineral and organic fertilisers, both commercial and 'on-farm'), national or EU-level targets, company overall or per-product ... The work will include: collating relevant literature (including published analysis of 'quotas' in other sectors), first draft paper, refinement of this draft via 2-3 online or stakeholder meetings, finalisation of briefing paper with references. The paper aims to contribute to EU policy developments on nutrient circularity (see ESPP's stakeholder proposals for [market pull policies](#) to support nutrient recycling and for [nutrients in the EU Circular Economy Act](#)). Objective is to finalise the paper by end September 2025

Work will be funded and published by ESPP. Expressions of interest to ESPP by 9<sup>th</sup> May to [info@phosphorusplatform.eu](mailto:info@phosphorusplatform.eu)

### Help ESPP continue sharing free information on phosphorus sustainability

We have launched a crowdfunding campaign to sustain free access to our information and resources, in particular this eNews and SCOPE Newsletter. Your support is essential to keep knowledge on phosphorus sustainability open to all.

ESPP is committed to sharing open, up-to-date and (as far as feasible) objectively validated information on phosphorus sustainability, recycling, and innovation — essential for environmental protection, food security, and the circular economy. Through our website, eNews, SCOPE Newsletter, and social media, ESPP provides free, open-access information on the latest technologies, scientific research, and policies related to phosphorus. We connect stakeholders across industries, encourage innovation, and share best practices to advance sustainable phosphorus management.

ESPP operates without public subsidies, relying solely on membership fees. This funding model, while preserving our independence, limits our capacity to expand activities and to continue providing high-quality information, by making the full content of the eNews, SCOPE Newsletter and our website freely accessible. Your support can help us to continue the free distribution of up-to-date information on phosphorus sustainability, promote recycling innovation and facilitate cross-sector dialogue and collaboration. If you believe in open access and a more sustainable future, please consider making a donation. Every contribution helps keep knowledge flowing!

Donate here: <https://gofund.me/e25dfa8c>

### Sign the joint stakeholder call for nutrients in the EU Circular Economy Act

To sign this joint call, contact ESPP, specifying your organisation name, signatory contact, logo.

The EU Circular Economy Act is currently under preparation. This will be the first EU legal Act (Parliament and Council) for circularity and recycling, replacing the Commission's Circular Economy Action Plans 1 and 2, and is has been announced as part of the new Commission's Clean Industrial Deal (see below).

Now is the time to input to this proposed Act, which is expected to include changes to Waste legislation, Public Purchasing, producer responsibility, and aims to boosting consumer demand for recycled materials.

ESPP has prepared detailed technical input, addressing nutrient circularity in a wide range of regulations and policies [www.phosphorusplatform.eu/regulatory](http://www.phosphorusplatform.eu/regulatory)

All organisations are invited to co-sign the 1-page "joint call for nutrients in the EU Circular Economy Act" [www.phosphorusplatform.eu/regulatory](http://www.phosphorusplatform.eu/regulatory)

## Public consultations open

### Open: EU consultations on simplification of sustainability reporting

Public consultations on modifications to EU Sustainability Reporting Standards, as part of the Commission's 'Omnibus' simplification package. See [ESPP eNews n°95](#).

European Commission 'Omnibus Package' announcement 26<sup>th</sup> February 2025 "Commission simplifies rules on sustainability and EU Investments" [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_25\\_614?link\\_id=a2a47574-5401-4cc8-95c7-0c429f73aeed](https://ec.europa.eu/commission/presscorner/detail/en/ip_25_614?link_id=a2a47574-5401-4cc8-95c7-0c429f73aeed)

EFRAG public consultation (under mandate from the European Commission) on simplification of the European Sustainability Reporting Standards (ESRS) open to 6<sup>th</sup> May 2025 <https://survey.alchemer.eu/s3/90824354/ESRS-Set-1-revision-Questionnaire-for-public-feedback>

## Open: EU consultation on next EU budget framework

EU public consultation on post-2027 Multiannual Financial Framework (MFF), to inform the architecture of the EU budget for the next 5-10 years. See [ESPP eNews n°95](#).

“EU’s next long-term budget (MFF) – performance of the EU budget”, public consultation, **open to 6<sup>th</sup> May 2025**  
[https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14526-EUs-next-long-term-budget-MFF-performance-of-the-EU-budget\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14526-EUs-next-long-term-budget-MFF-performance-of-the-EU-budget_en)

## New ESPP member

### LIFE Phos4EU – demonstration of vivianite recovery

The Phos4EU project focuses on scaling up the ViviMag process for extracting vivianite (hydrated iron(II) phosphate) from municipal wastewater treatment works.

The ViviMag technology uses magnetic separation to extract vivianite from sewage liquors (see [ESPP Technology Catalogue](#)). The LIFE project will scale up from the existing pilot plant (automated 1 m<sup>3</sup>/h pilot) to representative scale (half full scale, 9 m<sup>3</sup>/h digested sludge inflow) and test at waste water treatment plants (Roermond Netherlands and Burgos Spain). The project aims



to recover at least 60% of the phosphorus in the input sludge and produce significant quantities of vivianite (c. 600 tonnes). This will be used for trials and market chain evaluation of possible uses of vivianite including in fertilisers, in fire safety, as a pigment, and as an input material for phosphorus recovery process tests (separation of phosphorus and iron to produce useable products, such as phosphoric acid or P<sub>4</sub>, iron chloride). CO<sub>2</sub> emissions reductions will be calculated. The project partners are Limburg Water Board, Brabantse Delta Water Board, Acciona, Aquaminerals and STOWA, in cooperation with Kemira (ViviMag patent owner), Wetsus, Delft University, ICL, Rijn en IJssel Waterboard and Haskoning.

Phos4EU LIFE project (LIFE22-ENV-NL-LIFE Phos4EU – 101113877) 2025 – 2027, EU LIFE website project summary [LINK](#).

Photo: 1 m<sup>3</sup>/h pilot ViviMag unit, 2023.



## Policy

### EU Battery Recycling Regulation to require phosphorus to be accounted

From 1<sup>st</sup> January 2030, phosphorus must be taken into account in calculating battery material recycling efficiency. ESPP suggests to go further and add phosphorus to the list of five elements with specific recycling targets. The final version of the Amending Regulation (adopted by the European Commission, pending publication) defining calculation methods for the battery recycling (fixing annexes to the EU Battery Recycling Regulation 2023/1542) specifies that the battery material recycling rate must take into account carbon and iron from cells and phosphorus. ESPP requested that this be modified from the draft submitted to public consultation in October 2024 (see [ESPP eNews n°93](#)) which left consideration of phosphorus voluntary (along with chlorine and sulphur). ESPP notes that the EU Battery Recycling Regulation 2023/1542 includes in Annex VI the obligation that labelling must indicate all EU Critical Raw Materials (CRMs) present at > 0.1% by weight. Phosphorus is an EU Critical Raw Material, with EU imports from Russia today a significant issue, and Lithium Iron Phosphate is today the dominant battery technology. ESPP therefore suggests that a delegated Regulation be considered to add phosphorus to the list of five elements with specific recycling targets (in Annex XII-C of 2023/1542).

Adopted Delegated Regulation “supplementing Regulation (EU) 2023/1542 ... by establishing the methodology for calculation and verification of rates for recycling efficiency and recovery of materials from waste batteries, and the format for the documentation”,

[https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14265-Calculation-and-verification-methodology-of-rates-for-recycling-efficiency-and-recovery-of-materials-of-waste-batteries\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14265-Calculation-and-verification-methodology-of-rates-for-recycling-efficiency-and-recovery-of-materials-of-waste-batteries_en)

EU Battery Recycling Regulation 2023/1542 <https://eur-lex.europa.eu/eli/reg/2023/1542/oj/eng>

ESPP letter to the European Commission on Battery Recycling Directive 31<sup>st</sup> December 2024 [www.phosphorusplatform.eu/regulatory](http://www.phosphorusplatform.eu/regulatory)

### EU phosphate supply: can Europe find enough P without Russian imports ?

Expert analysis by Alberto Persona (Fertecon - S&P Global) shows EU P supply risks and dependency on imports from Russia, need to find and invest in new supply sources, joint projects in phosphate rock mining countries, recycling.

The seven page analysis, following a suggestion by ESPP, is published [here](#) and fills information gaps as to date analysis has mainly concentrated on nitrogen fertiliser and potash supply and the EU nitrogen fertiliser industry crisis (caused by natural gas prices). The analysis notes the complexity of the phosphorus supply and use chains, including phosphate rock, phosphoric acid, P<sub>4</sub> and derivatives (used in renewable energy and strategic industry sectors), fertilisers, animal feed phosphates, industrial phosphate uses, as well as P in animal feed and food products, manure and other organic wastes. International supply of

phosphate rock, the raw material of all phosphorus value chains, is highly concentrated with five countries accounting for close to 80% of international trade: Morocco, Jordan, Syria, Peru, Egypt. For phosphate fertilisers, the situation is similar, with again 5 countries accounting for about 80% of international trade: Morocco, Russia, the United States, Saudi Arabia, and China. EU phosphate imports overall decreased hugely 2021 – 2023, with the supply disruption and price increases following Russia's invasion of Ukraine. Today around 25% of fertilizer imports and 30% of phosphate rock imports still come from Russia. Possible answers to the EU's current high dependency on a small number of supply countries, including significantly Russia include: direct European investment in phosphate rock production and processing in other countries and development of new supply sources such as possible new mine projects in Europe and phosphorus recycling.

*"The EU's phosphate conundrum" (7 pages), April 2025, Alberto Persona, Associate Director of Fertilizer Analytics, Fertecon - S&P Global Commodity Insights here <https://www.phosphorusplatform.eu/downloads>*

## EU Clean Industrial Deal (CID): decarbonisation, circularity

**Commission flags fertilisers as a showcase for low-carbon and recycled nutrients reducing import dependencies, emissions and prices for farmers. CID may open door for actions on P-recycling, P<sub>4</sub>, bioeconomy, investments.**

The fertilisers industry is flagged as an illustration of the potential of the CID, with low-carbon and recycled nutrient fertilisers (page 16).

The European Commission's Clean Industrial Deal (CID) aims to make decarbonisation a driver for economic growth, quality jobs and business resilience, by removing dependency on energy prices and imported resources, and in parallel circularity, to maximise resource use and reduce import dependencies, making the EU more competitive and resilient. Sectorial plans will be developed for automotive, steel and metals, chemicals (adoption late 2025), transport and the bioeconomy. Significant funds will be mobilised for investments in clean transition, decarbonisation and circularity.

Specific policies announced include:

- Introducing sustainability, resilience and 'made in Europe' criteria in Public Procurement (see also: "ESPP input submitted: Evaluation of public procurement directives" in [ESPP eNews n°95](#)),
- Trans-Regional Circularity Hubs
- Possible company joint purchasing for Critical Raw Materials (phosphates, P<sub>4</sub>), in an EU Critical Raw Materials Centre,
- Incentivise diversion from landfill to recycling and more effective separate collection,
- Work with Member States to green tax systems,
- Facilitate trade and investment partnerships (*ESPP comment: could be relevant for phosphate and phosphorus chemicals?*),
- Support investments in green energies, electricity grid and storage

The CID includes (page 14) indications concerning the Circular Economy Act planned for 2026. This will aim to:

- "enable the free movement of circular products, secondary raw materials and waste, foster a higher supply of high quality recyclates and stimulate demand for secondary materials and circular products while bringing down feedstock costs",
- "harmonise "end of waste" criteria to facilitate the transition from waste to valuable secondary raw materials",
- "simplify, digitalise and expand in a targeted manner extended producer responsibility"
- "boost demand through criteria for public procurement"
- "mandate the use of new raw material sources like recycled and bio-based materials to substitute, for example, virgin fossil materials in plastics".

*European Commission "Clean Industrial Deal. A plan for EU competitiveness and decarbonisation", 26<sup>th</sup> February 2025*  
[https://commission.europa.eu/topics/eu-competitiveness/clean-industrial-deal\\_en](https://commission.europa.eu/topics/eu-competitiveness/clean-industrial-deal_en)

## EU Green Deal progress assessment

**European Commission 2025 analysis of Green Deal underlines challenges to deliver the -50% nutrient loss reduction target.** The 150 page document by the Commission's Joint Research Centre (JRC) analyses progress towards achieving Green Deal targets and relevant policies by seven thematic areas, including 'Circular Economy' and 'Greening the CAP / Farm-to-Fork' and covers a total 154 targets (from 44 policy documents), some binding, others non-binding. Progress is considered on-track for nearly two thirds of targets, whereas around one third will require accelerated effort and 10% are in reverse or stagnation. Nutrient loss reduction is considered as 'requiring acceleration' despite the 2005-2020 trend being "rather stagnant" (indicator: nitrates in groundwater, page 87). The Key Messages for the CAP thematic area state: "Meeting reduction targets for ... nutrient losses remains challenging and requires acceleration. The consumption footprint of food showed an increasing trend, primarily driven by animal-based products ... The EU food system contributed to the transgression of some planetary boundaries." Nutrient recovery and more efficient fertiliser application are also cited under the thematic area 'Zero Pollution Ambition', with nutrient loss reductions are identified as posing challenges to soil health strategy targets, and nutrient losses to water are again flagged in the Key Messages for this thematic area.

*"Delivering the Green Deal. Progress towards targets", European Commission (JRC) 2025, 150 pages, ISBN 978-92-68-23180-7,*  
<https://dx.doi.org/10.2760/3105205>

# Circular Economy Act

## EURIC (recycling industry) priorities

**The confederation calls to integrate climate and circularity policies. Proposals include facilitating End-of-Waste, distinguishing between raw waste and processed secondary raw materials, recycled target contents for products.** Although EURIC is little concerned by the nutrient circular economy and organics recycling, EURIC's priorities roadmap 2024-2029 includes a number of proposals relevant to nutrients in the future EU Circular Economy Act:

- Accelerate EU End-of-Waste criteria, with fast-track where a value chain agrees on proposed criteria,
- Mutual Recognition (i.e. by other Member States) of "National" End-of-Waste for non-hazardous wastes,
- Distinguish between unprocessed waste and quality recycled secondary materials, to enable free trade of the latter,
- Facilitate waste shipments,
- Address at source contaminants and chemicals susceptible to be an obstacle to recycling and protect the EU market from imports of products which are not compliant,
- Lower VAT for recycled products,
- Set recycled content targets ("quotas") for products (EURIC refers to metals, tyres and textiles),
- Facilitate innovation and testing.

"4 priorities for recyclers 2024-2029. Bridging policy ambition with industrial reality", EURIC, the European Recycling Industries' Confederation, 2024, 8 pages [https://euric.org/images/Position-papers/EuRIC\\_Priorities\\_2024-2029.pdf](https://euric.org/images/Position-papers/EuRIC_Priorities_2024-2029.pdf)

## Italians call for ambitious Circular Economy Act

**Confindustria (Italy industry federation) and Italian MEPs call for simplification and a technology neutral approach to support recycling technologies to develop circularity in parallel with climate goals.** An informal meeting in the European Parliament was hosted by MEP Massimiliano Saini (EPP), with Cofindustria, Gilberto Pichetto Fratin, Italy's Minister for the Environment, Antonio Decaro MEP (S&D), the European Commission and a number of industry representatives. Cofindustria has published a report on Circular Economy strategies, making recommendations including

- Coordinate energy transition, sustainability, supply security and circular economy policies,
- Harmonise and simplify regulations (e.g. EcoDesign, Green Claims, waste ...),
- Simplify waste management authorisation procedures and rationalise End-of-Waste,
- Promote circularity through Public Procurement and fiscal and financial measures,
- Remove obstacles and streamline site permitting,
- Rationalise End-of-Waste,
- Simplify regulation for research and innovation.

"Informal debate in European Parliament shows early industry demands for Circular Economy Act", EuroNews, 17<sup>th</sup> March 2025 [HERE](#)

"Circular Economy: industrial strategies and prospects", Confindustria, full report in Italian 300 pages, summary in English 30 pages, March 2025 <https://www.confindustria.it/home/policy/position-paper/dettaglio/rapporto-economia-circolare>

## Netherlands associations proposals for Circular Economy and End-of-Waste

**Based on wide consultation of stakeholders, proposals are to enable currently complex End-of-Waste by 'Voluntary Certification' defined between supplier and buyer, which can then be translated into legal criteria.** The proposals are developed by consultant EcoMatters for [Invest-NL](#), a state-owned organisation which finances entrepreneurs, and [Groene Chimie Nieuwe Economie](#), a platform to facilitate sustainable transition in chemicals production. Proposals include:

- Develop End-of-Waste 'Self Declaration',
- Develop EU recognition of national End-of-Waste rulings,
- Enable national End-of-Waste rulings to justify other End-of-Waste claims,
- Clarify End-of-Waste requirements, in particular concerning health and environment safety,
- Enable industry-led certification schemes for specific waste streams, recycling technologies or applications, when End-of-Waste criteria do not exist, with legal recognition, where possible using existing certification systems and organisations,
- Develop EU End-of-Waste criteria, in particular for plastics and for bio-based waste streams,
- Providing a single point of contact,
- Develop guidance, link to product legislation.

"End of Waste White Paper" (44 pages, in English), Invest-NL, Groene Chimie Nieuwe Economie, EcoMatters, 05\_04\_2023 <https://www.invest-nl.nl/business-development/publicaties/end-of-waste?lang=en>

"Eeinde-Abvalstatus Plossingstrategie & Plan" (End of Waste Status Solution Strategy), (16 pages, in Dutch, with 2 page English summary), Invest-NL, Groene Chimie Nieuwe Economie, BinGo Results, July 2023 <https://www.invest-nl.nl/business-development/publicaties/end-of-waste?lang=en>

## Nutrient recycling

### CleanTeQ Water delivering first PHOSPHIX® ion-exchange P-recovery plant

**Full-scale (90 m<sup>3</sup>/h) PHOSPHIX unit will treat discharge from an MBR (membrane bio-reactor) treating wastewater for an industrial client in Ireland. Detailed design phase is underway and plant is expected to be operational in early 2026,** recovering up over 100 tonnes per year of hydroxyapatite rich sludge (dry mass basis) per year (c. 15 t/y of phosphorus – P). This follows successful on-site testing of a pilot unit operating at 8 l/h inflow. PHOSPHIX® was developed by CleanTeQ Water (Australia) and is commercialised and implemented in Ireland through a partnership with ENVA, a provider of waste management and resource recovery solutions. The PHOSPHIX® process uses selective ion exchange to achieve P-removal to <0.1 mgP<sub>ortho</sub>/l. Sodium hydroxide and sodium chloride are used for ion exchange resin regeneration then lime is used to precipitate calcium phosphate (hydroxyapatite) for P-recovery, and the P-depleted solution can be recycled back for further use for regeneration, so minimising reagent consumption. For this project, the MBR inflow to the PHOSPHIX® unit has soluble phosphorus levels up to 20 mgP<sub>ortho</sub>/l, moderate levels of organics (TOC < 10 mg/L) and low suspended solids (TSS < 5 mg/L), but contains significant levels of ions such as 1,500 mg/l SO<sub>4</sub>, 600 – 800 mg/l HCO<sub>3</sub>, and 500 mg/l Cl. The selective phosphorus removal has shown not to be significantly impacted by these ions.

See ESPP Nutrient Recovery Technology Catalogue <https://www.phosphorusplatform.eu/techcatalogue>

“Clean TeQ Water Awarded a Contract of over AU\$11m for a PHOSPHIX® Plant in Ireland” [c. 7 million €], 15th November 2024 <https://www.cleanteqwater.com/news/clean-teq-water-awarded-a-contract-of-over-au11m-for-a-phosphix-plant-in-ireland/>

A poster outlining the project will be presented at the [IWA Nutrient Removal and Recovery Conference](#), the Netherlands, in May, and a full paper will be presented in May Australia’s water conference [OzWater](#)

### Stercore manure pyrolysis project validated

**EU-funded expert’s opinion should enable STERCORE’s manure pyrolysis to start construction in The Netherlands, aiming to process c. 400 000 t/y manure and farm wastes to biochar, methane and food-grade CO<sub>2</sub>.** The plant construction in Emmen, The Netherlands, was announced in [2020](#) but has been delayed by a court case brought by an environmental NGO [Milieudefensie Westerveld](#). This was finally [resolved](#) by the Netherlands High Court declaring Milieudefensie’s appeal unfounded in 2023. EU Green Assist has [funded](#) an expert review of Stercore’s business plan and technical documentation, following a request by one of the company’s equity funders. The EU’s [Green Assist](#) (Green Advisory Service for Sustainable Investments Support, InvestEU and LIFE) can fund free advisory services by accredited experts, to project promoters, financial institutions or other project partners, with the aim of facilitating green investment projects. The Green Assist funded opinion for Stercore and the resolution of the legal challenge should now allow the project to go ahead. The plant will include composting to pre-dry and sanitise the input materials, pyrolysis, treatment of syngas to purified methane (objective 23 million m<sup>3</sup>/y), recovery of purified liquified CO<sub>2</sub>, combining of the biochar with organic materials and mineral nutrients to produce tailor-made fertilisers.

Stercore: See ESPP Nutrient Recovery Technology Catalogue <https://www.phosphorusplatform.eu/techcatalogue>

“Green Assist: the Green Advisory Service for Sustainable Investments Support” [LINK](#).

EU CINEA press release “Green Assist: Producing sustainable end products from renewable raw materials”, [28<sup>th</sup> January 2025](#)

Stercore press release “STERCORE has been fully vindicated by the Council of State”, [12<sup>th</sup> October 2023](#)

### EasyMining confirms funding for first Ash2Phos plant

**The Saxony-Anhalt Environment Ministry has confirmed 27 million € funding for the first full-scale Ash2Phos P-recovery plant at Schkopau near Leipzig, to process 30 000 t/y of sewage sludge incineration ash** (see [ESPP eNews n°62](#)). The Ash2Phos process leaches more than 90% of the phosphorus out of ash using hydrochloric acid, then separates iron, aluminium and heavy metals by a series of dissolution and precipitation steps, resulting in a clean calcium phosphate product of animal food quality. A second 30 000 t-ash/y plant is under permitting at Helsingborg, Sweden (see ESPP [Nutrient Recovery Technology Catalogue](#)). The Schkopau plant is a joint venture with Gelsenwasser AG, one of Germany’s largest utility companies operating mainly in the Ruhr, Muensterland, lower Rhein and Eastern Westphalia regions. The Minister of the Environment for Saxony-Anhalt, Armin Willingmann, commented: “With the establishment of this highly innovative phosphorus recovery plant, Saxony-Anhalt can once again make a name for itself as a state of future technologies. Phosphorus is a critical raw material on which our agriculture in particular depends on. Recovering the raw material could also make an important contribution to protecting our environment and our natural resources.”

“Saxony-Anhalt funds innovative phosphorus recovery plant in Schkopau, Germany”, [EasyMining News](#), [17<sup>th</sup> February 2025](#).

## Research

### Food phosphate additives widespread in US foods

**Labels suggest that phosphate food additives are present in over half of 40 000 processed food products from leading US manufacturers. Suggestions of health risks are however unclear.** Analysis of labels of processed food products from the 25 leading US food product companies conclude that one or more phosphorus-containing food additives are present in 56% of products representing 52% of (relevant) sales (the sales of these P-additive containing products represent some 250 billion US\$ revenue for these 25 companies). The most frequently identified additive (32%) is however lecithin, which is not an inorganic phosphate food additive, but is a mixture of extracted plant phospholipids. Also, nearly one third of the products containing P-additives were beverages (probably largely phosphoric acid used in fizzy drinks). The authors conclude that this shows widespread population exposure in the USA to P food additives, neglected to point out that this is only relevant for people significantly consuming processed food products. They note that this study does not allow quantification of contribution of P food additives to dietary P intake. Despite this, the paper’s abstract states that “*Phosphate additives have more rapid/efficient absorption than naturally occurring dietary phosphate and ... greater contribution to total phosphorus intake.*”. This is misleading and to ESPP’s understanding wrong: it ignores that the paper’s data suggests that 32% of P-additives are lecithin, plus 10% P-modified starch, which are not inorganic and not better absorbed. There is no evidence in the paper to support the surprising statement that food additive P in diets is higher than natural diet P. Indeed, the paper’s cited references include Fulgoni et al. 2021 who concluded that food additive P is less than one fifth of total P intake and decreasing (see summary in [ESPP eNews n°70](#)). The paper also suggests that phosphate food additive intake is linked to health problems in the general population (not kidney patients), but the cited references for this seem limited and unclear, in some cases making a link between ultraprocessed food consumption and kidney decline ([Cai et al.](#), Netherlands, 2022) without evidence that this is related to phosphorus in the ultraprocessed foods, in other cases based on only one high phosphate dose ([Volk et al.](#) 2022). To ESPP’s understanding, there is evidence relating increased (baseline) blood phosphate levels to health problems (in particular cardiovascular disease CVD) in healthy human populations (not kidney patients), as well as animal studies showing such effects and known potential physiological mechanisms (calcium phosphate precipitation leading to artery hardening, hormone changes), but no clear evidence that increased diet phosphorus leads to increased blood phosphorus (except in the hours after the P intake) in persons whose kidneys are functioning normally (see discussion of Cooke (IFAC) 2017 in [ESPP eNews n°16](#)). One cited recent study, however, based on FFQ (food frequency questionnaire) and urine analysis of nearly 4 000 Jackson Heart Study participants, concludes a link between estimated food phosphate intake (but not natural diet P) and kidney function ([Duong et al.](#) 2022)

“Phosphate-based additives in processed foods: is excess exposure a cause for concern? A cross-sectional examination of the United States packaged food supply”, E. Dunford & M. Calvo, *Am J Clin Nutr*, 2025, 121, 873-881, [DOI](#).

“Industrial Use of Phosphate Food Additives: A Mechanism Linking Ultra-Processed Food Intake to Cardiorenal Disease Risk?” M. Calvo, E. Dunford & J. Uribarri, *Nutrients* 2023, 15, 3510, [DOI](#).

“Bioavailability of phosphorus and kidney function in the Jackson Heart Study”, C. Duong et al., *Am J Clin Nutr* 2022, 116, 541–550, [DOI](#).

## ESPP members



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## Stay informed

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