Events

ESNI-NERM 2026 – the flagship event on nutrient research, Brussels, 28-29 April 2026

The European Sustainable Nutrient Initiative (ESNI) Conference and the Nutrients in Europe Research Meeting (NERM) are merging to bring together all the community working on research and innovation focused on nutrient management. ESNI-NERM is the flagship event on nutrient management. It provides an overview of the scientific issues, developments and challenges of nutrient management and nutrient recycling, with plenary and parallel sessions and poster sessions.

Call for abstracts is open until 30th January 2026

NERM-ESNI Tue. 28th April 2026 12h00 – Wed. 29th April 16h30 https://www.biorefine.eu/esni-nerm-2026/

18th CRU Phosphates & Potash 2026, Paris, 13-15 April 2026

This is "the" annual world P and K industry & technology meeting place, covering the whole industry value chain: mining and resources, beneficiation, fertilisers – feed and industrial applications, environmental aspects of production management, sustainability.

For ESPP, Robert van Spingelen, ESPP President, and Willem Shipper, Willem Schipper Consulting, will present on "Elemental Phosphorus (P4) Markets: End-Uses, Supply Bottlenecks, and European Project Pathways".

18th CRU Phosphates & Potash 2026, Paris (Paris Marriott Rive Gauche Hotel), 13-15 April 2026 http://events.crugroup.com/phosphates/home

Conference discount code available on request from ESPP for ESPP members.

25th ICPC Phosphorus Chemistry conference, Montpellier, 5-8 July 2026

ICPC (International Conference on Phosphorus Chemistry), every three years, is the main world phosphorus chemistry event, for 60 years now. ICPC looks at all aspects of phosphorus chemistry today, at the meeting point of biology, health and nutrient, medicine, materials sciences and applied industrial chemistry. Sessions cover new developments in phosphorus chemistry, applications of phosphorus-based catalysts, health sciences and biochemistry of phosphorus, new phosphorus-based materials and applications.

During ICPC July 2026, ESPP supports a session on "Progress and obstacles to producing industrial organo-P chemicals without P_4", within the conference Topic 4 Phosphorus Material Chemistry & Applied Science. This session will bring together research into routes to reach some essential organophosphorus chemicals without the P_4 furnace route, e.g. for battery electrolytes, water treatment, pharmaceuticals, catalysts, photovoltaics, fire safety of electrical and electronic systems. What

fundamental research is ongoing and what is the progress? Which organophosphorus chemicals can be produced? How feasible is scale-up of reactions tested in the lab? What is the energy balance?

Call for abstracts is open to 3rd April 2026.

25th ICPC Phosphorus Chemistry Conference, Montpellier (at ENSCM Ecole Nationale Supérieure de Chimie de Montpellier), 5-8 July 2026. Conference website: https://icpc25.sciencesconf.org/?lang=en

Open calls and consultations

EU consultation: public procurement rules

Public consultation open to 26th January 2026. Aim is to improve clarity and effectiveness of the EU Public Procurement (PP) framework and to better use PP to support sustainability and resilience. ESPP will input welcoming the announced objective to promote sustainability and resilience and calling that the public procurement be aligned with the future EU Circular Economy Act and with the EU Critical Raw Materials Act. ESPP suggests to replace the current prioritisation of the "lowest cost option" wherever feasible by consideration of environment, circularity and local supply chain.

EU public consultation open to 26th January 2026, "EU public procurement rules – revision", "Call for Evidence": input = 4000 characters text plus optional attached document https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/15492-EU-public-procurement-rules-revision_en

See also previous EU consultation on public procurement 7th March 2025 ESPP eNews n°94. and ESPP input submitted (1 page): www.phosphorusplatform.eu/regulatory

EU consultation: battery labelling rules

Public consultation open to 26th January 2026. Update to annexes of EU Batteries and Waste Batteries Regulation 2023/1254. The requirement to indicate Critical Raw Materials (applicable to phosphorus) remains in place.

EU public consultation open to 26th January 2026, "Batteries – labelling (new rules)" https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14456-Batteries-labelling-new-rules-_en

EU stakeholder survey: research to support agriculture

Public survey open to 25th January 2026. Stakeholder input is requested to define research and innovation priorities support the EU farming, with aims of "long-term competitiveness and sustainability" in the context the European Commission's Vision for Agriculture and Food (see ESPP eNews 95). Some 12 questions cover future-readiness and overall strategic aims, specific research objectives, valorisation of R&I results, investment and innovation uptake, cooperation and thematic priorities for agricultural R&I. One of the proposed R&I priority themes is "Sustainable management of land, soil, water and nutrients". Circularity is not mentioned. The survey is explicitly anonymous, so ESPP will not respond as an organisation, eNews readers are welcome to respond as individuals.

EU public stakeholder survey, open to 25th January 2026 – input is anonymous – 12 questions plus possibility to upload a document, "Future-proofing EU Agri-Food through research and innovation" https://ec.europa.eu/eusurvey/runner/Future-proofing_EUAgri-Food_through-RI

Policy and regulation

EU Commission proposal on food and feed fails to address P recycling

'Omnibus' simplification proposals do not consider obstacles to phosphorus recycling in the Animal Feed Regulation 767/2009, moves towards change of status of most materials currently classed as Cat.1 Animal By-Products (ABP).

ESPP regrets that despite input from Sweden (ESPP eNews n°100), from eight European organisations led by FEFAC (joint industry proposals, eNews n°97) and from ESPP (eNews n°101), the proposal does not address the annex of 767/2009 which currently excludes from use in animal feed any product extracted from sewage or manure, so excluding processes which generate safe, purified mineral phosphates from incineration ashes.

The proposed regulation changes make the first steps towards declassifying most current Cat.1 ABP materials, so removing the current requirement to separate and incinerate these materials. This is justified because current BSE risk limitation measures in 999/2001 are considered today outdated given the near-zero occurrence rates in the EU today (BSE = mad cow disease = bovine spongiform encephalopathy - prion transmission). The proposed regulation removes the current ban on production of collagen and gelatine from ruminant bones and would also allow the Commission to modify annexes of 999/2001 to declassify Cat.1 materials. To what extent the Commission will do this will probably depend on the outcomes of the requested EFSA Opinions on Cat.1 materials (see eNews n°100). If this declassification process is implemented, then the brain, eyes and spinal cords of healthy cattle from abattoirs would no longer be classified Cat.1 and Cat.1 ash (currently estimated by ESPP to contain c. 30 000 tP/y of phosphorus) will largely cease to exist. This will enable recycling of this phosphorus into Meat and Bone Meal (MBM) going to animal feed or to fertilisers, but not via chemical P-recovery from ash.

"Simpler food and feed safety rules while upholding high health standards and boosting competitiveness of EU producers", European Commission press release, 16th December 2025 https://ec.europa.eu/commission/presscorner/detail/en/ip_25_3081

"Proposal for a Regulation … amending Regulations (EC) No 999/2001, (EC) No 1829/2003 …" SWD(2025) 1030,, 2025/0410 (COD), and "Proposal for a Directive … amending Council Directive 98/58/EC and Directive 2009/128/EC …", 2025/0409 (COD), 16th December 2025 https://food.ec.europa.eu/horizontal-topics/simplification-legislation_en

European Commission RESourceEU Action Plan includes phosphorus

Plan will structure investment and market support and accelerate recycling and supply diversification for Critical Raw Materials (which includes both "Phosphate Rock" and "Phosphorus", meaning P_4). The RESourceEU Action Plan aims to ensure EU industry, defence and energy transition resilience and (specifically cited page 1) food security. Action will particularly target rare earths, permanent magnets, materials for batteries (which includes both Purified Phosphoric Acid and P_4) and defence. Actions announced include the launch of a European Critical Raw Materials Centre to steer value chain actions (including joint purchasing agreements, raw materials stockpiling), financing, project monitoring and international supply activities. Support totalling around 3 billion EU funds, augmented by private investment, should be mobilised for Critical Raw Material value chains within the coming year. Announced actions include:

- "an action plan to ensure the availability and affordability of domestic fertilisers, including actions to enable recycled nutrients and other alternatives to fertilisers" (to be proposed by mid-2026),
- promotion of "enhanced cooperation with our Neighbourhood countries, in particular in North-Africa, on access to phosphate rock and potash resources, and in the Gulf",
- partnerships with CRM supply countries, including several with phosphate rock resources and notably Kazakhstan (one of the EU's two suppliers of P_4) (page16),
- guidance to and revision of the EU Water Framework Directive (by mid-2026), targeting environmental permitting for mining and CRM processing,
- possible facilitation of mining, CRM processing and recycling activities in chemicals regulations inc. REACH,
- targeted amendments to the EU Critical Raw Materials Act2024/1252 concerning Strategic Projects, large companies using Strategic Materials, permanent magnets.

"Commission adopts RESourceEU to secure raw materials, reduce dependencies and boost competitiveness", 3rd December 2025* https://ec.europa.eu/commission/presscorner/detail/en/ip_25_2891

"RESourceEU Action Plan. Accelerating our critical raw materials strategy to adapt to a new reality", European Commission Communication COM(2025)945, 3rd December 2025 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52025DC0945

Fertilising Products Regulation (FPR) audit frequency modification

Two adjustments requested by industry to FPR Conformity Assessment are published: rationalisation of audit frequency for Module D (without reducing sampling frequency), clarifications regarding laboratories accredited to carry out nitrate fertiliser detonation resistance tests.

Commission Delegated Regulation 2025/1421 of 17th July 2025 (published in the Official Journal of 10th December 2025) "amending Regulation (EU) 2019/1009 … as regards the conformity assessment procedures for EU fertilising products" https://eur-lex.europa.eu/eli/reg_del/2025/1421/oj/eng

Health

Very high phosphate diet causes kidney problems in mice

Normal mice on very high phosphate diet (2.5 x normal) show kidney changes (tubule damage and fibrosis) after only two months, continuing to accentuate up to 6 months through to kidney TLS (tertiary lymphoid structures). The "high P diet" contained 2% phosphorus, compared to "normal diet" 0.8%P. Mice experimental results may not translate to humans, but for comparison, mice live maybe 18 months, so 2 months would be maybe ten years for humans, and the recommended daily intake (RDA) of phosphorus in humans is 0.7gP/day for adults (or 1.25 gP/day for adolescents) so the high P diet used here would be< 2 mgP/day, quite possible for a diet heavy in meat and processed food. This study showed that the high P diet in mice caused fairly consistent increased blood (serum) phosphorus (up by nearly +50%) and also increased blood levels of the hormone FGF23 (fibroblast growth factor). This hormone affects mineral metabolism, in particular downregulating kidney phosphate resorption, so increasing phosphate excretion in urine, however in excess it is also associated with vascular calcification, kidney disease and other problems. This increase in blood P and FGF23 with high P diet in mice confirms previous studies (see e.g. Kim et al, ESPP eNews 98, Hsu et al. ESPP eNews 95, Richter et al. 2022 and others) but may not do so in humans. In this new study, genetically modified mice producing high levels of FGF23 did not show kidney damage with normal P diet but did so with high P diet, enabling the authors to conclude that the kidney damage was caused directly by the high phosphate in diet, not by indirect effect by increased FGF23

"High Phosphate Load Induces De Novo Formation of Tertiary Lymphoid Structures in the Kidney" [in mice], N. Weingärtner et al., FASEB, 2025; 39:e71279 1 of 19, https://doi.org/10.1096/fj.202500968R

Nutrient stewardship

Low carbon roadmap for the international P and K fertilisers industry

Work underway with industry, experts and stakeholders, aims to identify best available solutions to decarbonise the phosphorus and potassium fertiliser industries, from mine through processing to fertiliser use. While decarbonisation efforts have focused on ammonia-based fertilisers, no equivalent framework exists for phosphate and potash fertilisers. The EBRD (European Bank for Reconstruction and Development) and IFA (International Fertilizer Association) wish to develop a low-carbon roadmap to net zero for the phosphate and potash fertiliser industry and has commissioned ERM, with support from Systemiq, to develop this. The aim of the project is to identify the policy and technology pathways needed to reduce the industry's climate impact while continuing to support global food security. The aim is to the launch the P and K fertilisers low-carbon roadmap at the IFA Cultivating Tomorrow Conference (June 2026). Initial online workshops on phosphorus and potassium fertilisers took place late 2025 and will be followed by in-person workshops in Morocco (P), hosted by OCP, and Canada (K) in March 2026. These workshops are free and open-to-all experts/companies - reach out to the ERM team (email below) to learn more.

At the 2025 decarbonisation workshops, expert presentations were given by several industry stakeholders and the focus was to brainstorm and review opportunities for the industry to reach net zero. For N fertilisers, maybe 2/3 of greenhouse emissions are related to downstream end-use of the fertiliser, because of nitrogen compound emissions to air in the field. For P and K fertilisers, downstream end-use emissions are lower but there are still significant raw material emissions from combination with N fertilisers due to ammonia. Another significant greenhouse impact is from CO_2 released from carbonate in (sedimentary) phosphate rock during acid attack as well as from process heat because of requirements for drying, calcination and reactor heating. Multiple solutions were proposed by different stakeholders for the different greenhouse impacts, including electrification, leaching of phosphate rock and energy efficiency measures. ESPP commented on the need to assess emissions related to phosphorus use: possible eutrophication impacts (algal growth fixing CO_2 or algal decay releasing methane), CO_2 benefits of eutrophication prevention measures (such as buffer strips or water retention in ditches) and CO_2 fixing resulting from increased crop growth. These emissions sources are currently poorly captured in corporate emissions accounting frameworks relevant for P producers, such as the GHG-Protocol, which hinders their potential inclusion in this global roadmap.

"ERM to support EBRD and IFA on development of low-carbon roadmap for the potash and phosphate fertilizer industry" ERM 5th September 2025 https://www.erm.com/about/news/erm-to-support-ebrd-and-ifa-on-development-of-low-carbon-roadmap-for-the-potash-and-phosphate-fertilizer-industry/

If you can contribute knowledge or information to this Low Carbon Roadmap for P and K fertilisers, contact: 'Daniel Saxton' daniel.saxton@erm.com

Looking for partners: phosphate fertiliser from landfill leachate

A technology developer in Croatia is looking for partners to take forward recovery of fertiliser from waste phosphogypsum stack discharge water, following successful lab-scale trials with the stack owner DE-FOS d.o.o. Phosphate fertiliser is recovered by dosing of the acidic phosphogypsum leachate with lime, sodium hydroxide and calcium hydroxide with controlled pH adjustment at temperatures of 40°C or lower. The acidic leachate from the Kutina phosphogypsum stacks, Croatia (8 million tonnes of phosphogypsum), contains around 9% P, 18% F, 27% calcium. The recovered fertiliser material contains c. 13% P (31 % P_2O_5), <2% F and 3 mg/kg cadmium. The fluorine can be recovered from the liquor as CaF_2 or NaF. The recovered phosphate fertiliser, and a combination with potassium sulphate, have been validated by Zagreb University as conform to EU Fertilising Products Regulation PFC 1(B)1 criteria (but to date, precipitated phosphates from landfill leachate are not authorised under CMC12). The project is now looking for technology or investment partners to take forward process development, pilot testing, scale-up.

Contact: Zdenko Ceraj zdenko.ceraj@gmail.com

Photo : Zdenko Ceraj, birds' nests in phosphogypsum at Kutina (probably sand martins)

Recycling potassium from ashes

EasyMining (ESPP member) is coordinating projects to develop recovery of fertiliser grade potassium and phosphate from a range of ashes from combustion of poultry litter, biomass for energy and of bioindustry wastes.

EasyMining's process ensures the absence of organic contaminants or pathogens, because of the combustion stage, and enables production of fertilisers with low levels of heavy metals, copper and zinc. EasyMining (Ragn-Sells group) already operates a full-scale plant recovering industrial grade potassium salts from municipal waste incineration ash (see ESPP nutrient technology Catalogue).

A current project is funded by the BioInnovation programme (Vinnova, Sweden's Innovation Agency, and the Swedish Energy Agency). Input ashes being tested include poultry litter incineration ash (rich in P and K, and already widely commercialised as a fertiliser after reformulation/granulation, see e.g. BMC Moerdijk), ashes from pulp and paper production and other bioindustry ashes. The work in this project, which will conclude in April 2026, includes screening and characterising of input biomaterials, optimising the recovery technology at lab and pilot scale, validating the recovered fertiliser products in pot trials, assessing the commercial viability and implementation of the process, and a Life Cycle Assessment. Two peer-reviewed papers connected with this work have published by authors from EasyMining and from the Swedish University of Agricultural Sciences: see below.

EasyMining has recently announced further funding by the Formas Biosociety Program to investigate the applicability and industrialisation of this technology on two waste streams common in Nordic countries: straw bioenergy ash and ash from combustion of wastes from production of fish feed ingredients by fermentation. In collaboration with partners across the value chain (Ragn-Sells, Bio3, Vilokan, Swedish Agricultural University), recycled fertilisers will be produced pilot scale and their properties and performance will be tested in agricultural filed tests. A feasibility study for full-scale implementation will be made, including a market analysis, engineering (plant design, equipment choice …), locations for implementation, life cycle assessment.

The first published paper presents analysis of ashes from incineration of organic wastes in different types of combustion unit: poultry litter, fish waste, Kraft cellulose fibre industry waste. Results show 6 – 24 %K and 3 – 9 %P in different poultry litter ash fractions, 0.2 -8 %K and 0 – 1.6 %P in Kraft waste ash, and 0.6 – 6%K and 2 – 6 %P in fish waste ash. Other nutrients (magnesium, calcium), metals (iron, aluminium, copper, zinc …) and heavy metals were also measured. Copper was always lower than 0.7%, zinc always lower than 0.6% and most heavy metals generally low in the fish and poultry manure ashes (e.g. cadmium always < 4 mg/kg). Cadmium levels were higher in the Kraft waste ash (up to 21 mg/kg) and barium levels were also higher in the Kraft waste ash (up to 5 300 mg/kg). Strontium and titanium were generally higher than 150 mg/kg in all tested ashes.

The second paper presents lab-scale tests (100g ash batches) of water leaching of poultry litter ash, followed by evaporation to crystallise potassium salts, leaving a phosphate-rich residue. Fly-ash from fluidised bed incineration of poultry litter with 20% plant residues was used. This ash contained 24% K and 3% P. Water leaching for 30 minutes at 70°C dissolved >90% of the potassium and > 99% of sulphate from the ash (leachate P concentration 0.0002%). Around one quarter of the potassium in the leachate was crystallised by simply cooling the leachate and further recovery was possible by evaporation. Using selective evaporation, recovered potassium sulphate with < 0.5% chloride content could be achieved. Most of the phosphate was not water leached and remained in the leaching residue, which showed c. 11%P, c. 23% Ca, significant levels (>1%) of Mg, Na, Si, Fe, Zn.

"Circular potassium project receives funding from Formas", EasyMining, 17th December 2025
https://newsroom.easymining.com/posts/pressreleases/circular-potassium-project-receives-funding-f

EasyMining Sustainable potassium , https://www.easymining.com/projects/product-development/sustainable-potassium/

"Recovery of potassium and phosphorus from biomass-derived ash", E. Moslehi et al., Cleaner Waste Systems 12 (2025) 100428
https://doi.org/10.1016/j.clwas.2025.100428

"Selective leaching and crystallization methods to produce potassium and phosphate fertilizers from poultry litter fly ash", E. Moslehi et al., Separation and Purification Technology 385 (2026) https://doi.org/10.1016/j.seppur.2025.136276

Recycling fishery wastes to fertilisers

EU funded R&D (Sea2Land, Horizon 2020) tests four lab produced fertilisers from fish processing waste or aquaculture sludge in field trials, showing nitrogen fertiliser effectiveness lower than mineral fertiliser. Three of the four tested products were from research lab-scale (c. 300 g/hour) treatments of fish processing wastes: fermentation with leaves and fuel-oil combustion ash; enzyme hydrolysis; formic acid autolysis followed by membrane separation. The fourth product was dried fish sludge (manure, uneaten food) from a commercial aquaculture company in Norway. Field testing was on broccoli, comparing to a control (no fertiliser) and an ammonium fertiliser (nitrogen application for all products 120 kgN/ha. The fermentation material showed significantly lower yield and nitrogen uptake / nitrogen use efficiency than the mineral fertiliser. The other three materials showed yield 10 – 20 % lower than the mineral fertiliser, but not statistically significant (also not statistically significantly better than control for 3 of the 4 materials). Soil carbon and biology, including soil fauna, were assessed, concluding that responses were variable and most indicators returned to baseline after harvest. Despite the field trial results, the authors nonetheless conclude that certain of the tested fish waste derived materials can effectively replace mineral fertilisers while enhancing soil health.

"Recycling fishery waste into biobased fertilizers: Agronomic performance and soil health impacts", J. Zhang et al., Soil & Tillage Research 253 (2025) 106686 https://doi.org/10.1016/j.still.2025.106686

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