



Chris Thornton - European Sustainable Phosphorous Platform

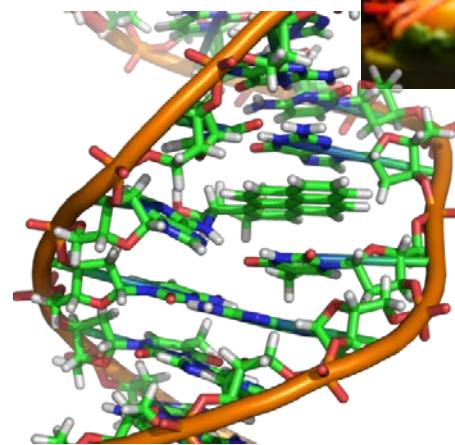
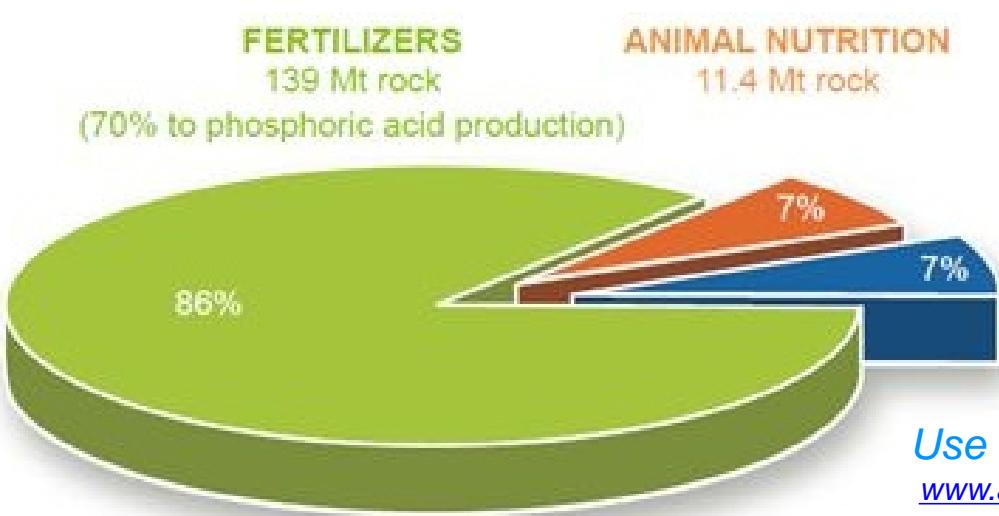
info@phosphorusplatform.eu

www.phosphorusplatform.eu  [@phosphorusfacts](https://twitter.com/phosphorusfacts)

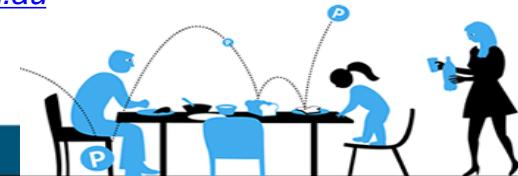
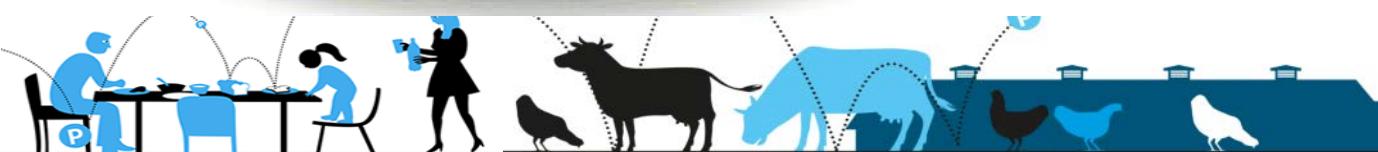


Phosphore

*nécessaire à la vie
non remplaçable,
non renouvelable*



Use of phosphate rock
www.aguiaresources.com.au



Quelques enjeux européens

- *dépendance géopolitique des ressources*
- *eutrophisation*
- *concentration de la production animale*
- *économie circulaire:*
emplois ruraux, revenus agricoles
- *méthanisation / énergie renouvelable*
- *émissions d'ammoniac*
- *gestion des boues d'épuration*
- *contaminants organiques*
- *carbone organique dans les sols*



Plateforme européenne pour le phosphore

- **Structure de dialogue et d'action partagée:**

- industrie: engrais (chimiques, organiques), chimie, déchets, eau
- gouvernements, régions
- science
- associations et fédérations

- **Lancée 2013**

- association sans but lucratif
- siège à Bruxelles
- financée par ses membres

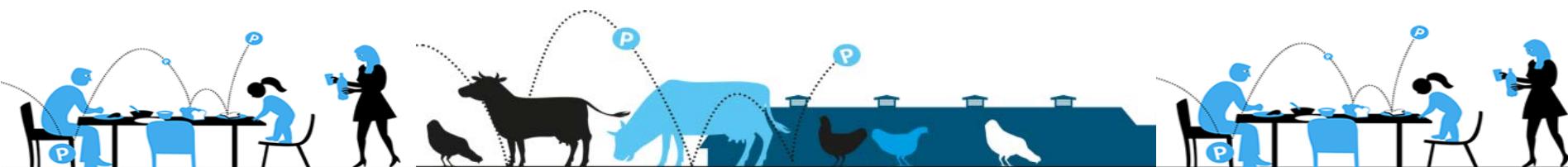


Plateforme européenne pour le phosphore

- **Des objectifs larges:**

Statuts: « promouvoir, faciliter, contribuer à et/ou mettre en œuvre la gestion durable du phosphore en Europe ... notamment:

- *Le phosphore comme ressource non-renouvelable et essentielle pour l'agriculture (production d'alimentation) et pour l'industrie en Europe*
- *Soutenabilité de la fourniture de la roche de phosphate, l'extraction minière, les procédés et les utilisations industrielles*
- *Réutilisation, récupération et recyclage du phosphore, en synergie avec d'autres nutriments/minéraux et énergie/carbone organique*
- *Efficacité et efficience de l'utilisation du phosphore en agriculture (productions végétales et élevage) et dans la bio-économie (bio-énergies, production de biomatériaux ...)*
- *Soutenabilité et sécurité de la chaîne alimentaire, depuis la production jusqu'à la consommation finale »*



Plateforme européenne pour le phosphore

- **Gouvernance**

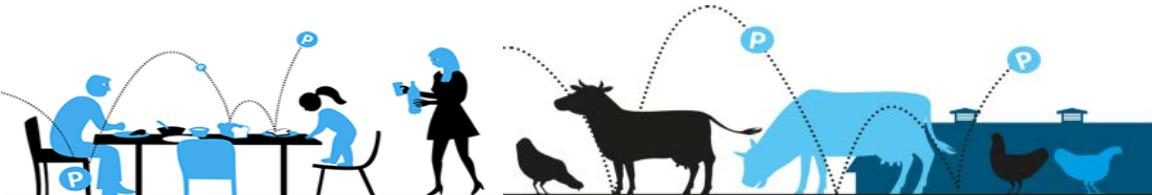
Formalités:

- EU Transparency Register 260483415852-40
- statuts en ligne
- Conseil d'Administration (CA) = membres
- Board et Président élus par CA

- **Consensus**

Réalité:

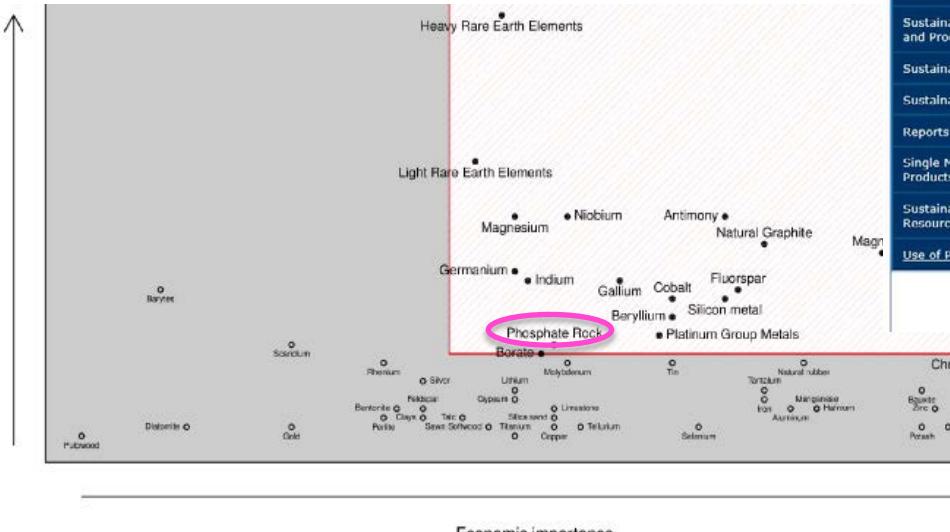
- travail ensemble, objectifs communs
- dialogue et propositions
plutôt que prises de position
- réseau de partage d'expérience
- circulation d'information



Politiques européennes

- 2014: EU Consultative Communication on Sustainable Use of Phosphorus
- 2014: phosphate rock on EU Critical Raw Materials List
- 2015: EU Circular Economy Package
- 2016: EU Fertilisers Regulation revision proposal (underway)

http://europa.eu/rapid/press-release_MEMO-14-377_en.htm




The screenshot shows the European Commission's Environment website. The main navigation bar includes links for Home, About us, Policies, Funding, Legal compliance, and News & outreach. On the left, there is a sidebar with links for Smarter and Cleaner, Sustainable Development, Resource Efficiency, Sustainable Consumption and Production, Sustainable Buildings, Sustainable Food, Reports & Studies, Single Market for Green Products, Sustainable Use of Natural Resources, and Use of Phosphorus. The main content area features a section titled 'Use of Phosphorus and its resource availability' with a sub-section for 'What's new?' and information about the '2nd European Sustainable Phosphorus Conference'.

Phosphorus is one of the essential nutrients for plants, animals and humans - to put it simply without phosphorus, life would not exist. Within plants, P is essential to cell development and structure, reproductive and enzyme balance and within animals for bone development, cell structure, reproduction etc. There is no substitute for P, and there never will be.

Consultative Communication on sustainable use of Phosphorus

The Commission launched on 8 July 2013 a consultation on how to use phosphorus in a more sustainable way (the official press release can be found here). Phosphorus is widely used in agriculture and is an essential component in fertiliser and food, but it is a non-renewable resource. Supplies are limited and much phosphorus is currently wasted, creating concerns about future supplies in the EU and worldwide.

The Consultative Communication on the Sustainable Use of Phosphorus (COM(2013)517) asked how to ensure that reserves are available for future generations, and about ways to minimize the undesirable side effects phosphorus use can have on the environment.

The consultation closed on 31 December 2013 and received 125 replies from a wide range of stakeholders. The summary of the 125 responses has been published as a Commission Staff Working Document (SWD(2014)263) on 1 August 2014.

All the responses submitted during the consultation are available [here](#) in their original language.

<http://ec.europa.eu/environment/natres/phosphorus.htm>



Politiques nationales

- 2005: Denmark tax on P in livestock feed
- 2013: Denmark Resource Strategy
80% recycling of sewage P
(in. biosolids to crops (objectives only))
- 2013: HELCOM Ministerial Declaration to “enhance” P recycling
- 2015: Sweden 40% P and 10% N recycling inc. biosolids to crops (objectives only)
- 2016: Switzerland decree
P-recovery from sewage
(obligation - promulgated)
- 2016: Germany decree
(obligation wwtp > 50 kpe, notified to EU)



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Principales nouveautés dans l'ordonnance sur le traitement des déchets

L'ordonnance sur le traitement des déchets (OTD) est soumise à une révision totale. Voici en résumé les principales modifications :

- Des exigences sont formulées pour la valorisation de certains déchets, laquelle n'était pas encore réglementée dans le droit fédéral. Il s'agit notamment des biodéchets (y compris réglementation relative aux possibles installations de traitement) et des déchets riches en phosphore.
- Un plan d'élimination des déchets est exigé pour tout projet de construction. Le maître d'ouvrage est tenu de déterminer les déchets dangereux pour la santé et pour l'environnement (ex. amianto, déchets de chantier contenant des bisphénols).



Bundesministerium
für Umwelt, Naturschutz,
Bau und Reaktorsicherheit

Suche

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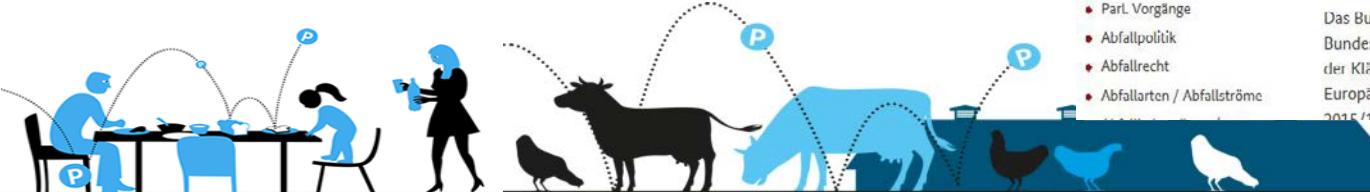
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[AbfKlärV: Klärschlammverordnung](#)

[Einleitung des Notifizierungsverfahren bei der EU-Kommission zur Novelle der Klärschlammverordnung](#)

Das Bundesumweltministerium hat am 26. September 2016 den mit den Bundesressorts abgestimmten Entwurf für eine Verordnung zur Neuordnung der Klärschlammverwertung (Klärschlammverordnung - AbfKlärV) der Europäischen Kommission zur Notifizierung gemäß der Richtlinie (EU) 2015/1525 des Europäischen Parlaments und des Rates vom 20. September



2016- 2017 EU Fertilisers Regulation

- Currently in Council - Parliament decision process
- Fertilisers (mineral & organic), soil amendments, etc
- EU criteria for composts, digestates,
food industry wastes, animal by-products
- Sewage biosolids excluded
- No provision for traceability
- STRUBIAS JRC expert group underway:
addition of: struvite, ashes, biochars
- Many issues remaining! see www.phosphorusplatform.eu/regulatory



EUROPEAN COMMISSION

European Commission > DocsRoom > Document detail

Proposal for a Regulation on the making available on the market of CE
marked fertilising products and amending Regulations (EC) No 1069/2009
and (EC) No 1107/2009

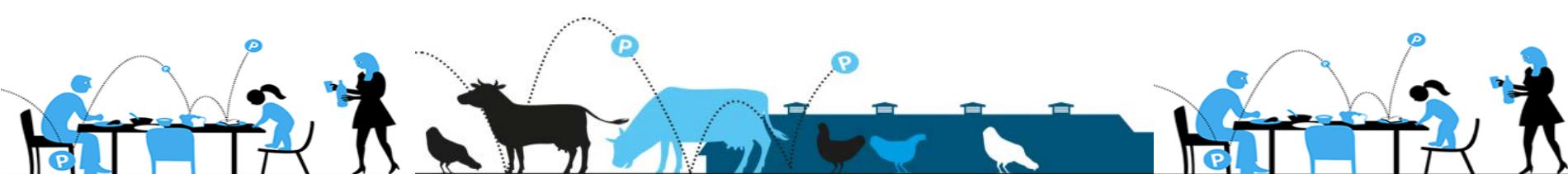
Document date: 17/03/2016 - Created by GROW.A.5.DIR - Publication date: 17/03/2016

<http://ec.europa.eu/DocsRoom/documents/15949>



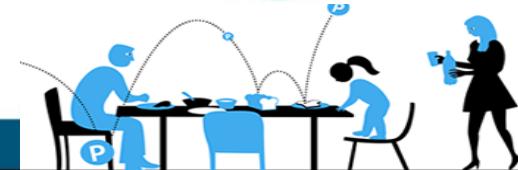
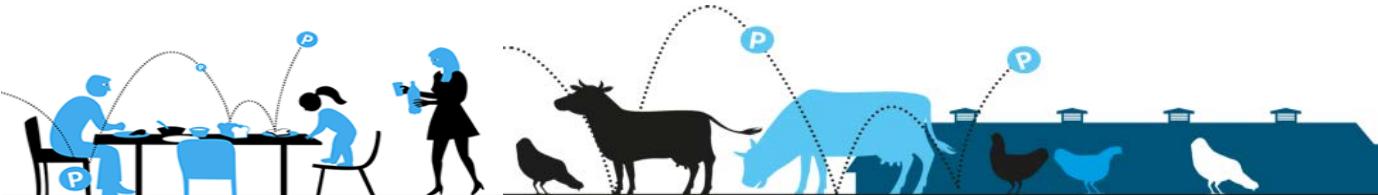
Autres actions en cours au niveau européen

- **EU Circular Economy package 2/12/2016** http://ec.europa.eu/environment/circular-economy/index_en.htm
 - 54% des répondants à la consultation ont cité le phosphore ou les nutriments
- **Green Deals – North Sea Resources Roundabout F, NL, FI, GB:** compost, struvite
EU call <https://ec.europa.eu/research/innovation-deals/index.cfm>
- **EIP-AGRI Focus Group FG19 nutriments recyclés** <https://ec.europa.eu/eip/agriculture/en/content/focus-groups>
- **Financements R&D Horizon 2020** <http://bookshop.europa.eu/en/circular-approaches-to-phosphorus-pbKI0115204/>
- **EMAS Agriculture - Best Environmental Management Practice**
- **REACH (European Chemical Regulation)** et produits recyclés: struvite, digestats
- **IED Industrial Emissions Directive BAT BREFs:** grands élevages, BAT ressources
- **Agriculture biologique: EGTOP avis sur les phosphates recyclés**
"Organic Fertilizers And Soil Conditioners (II)" 2/2/16 <http://ec.europa.eu/agriculture/organic/eu-policy/expertadvice/>
- **Avis de CEN** sur les standards nécessaires pour le recyclage du phosphore



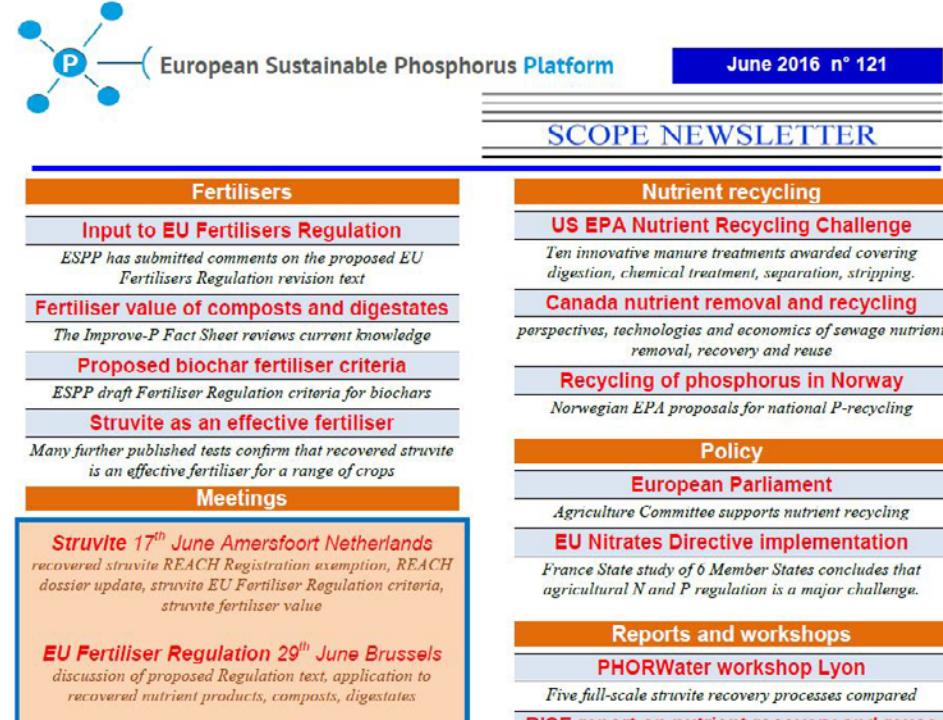
ESPP: communiquer et informer

- Propositions pour le programme de recherche Horizon 2020
- Atelier commun avec la Commission DG RTD sur les besoins de recherche sur le recyclage des nutriments
- DONUTSS flux de phosphore: identifier et chiffrer les potentiels de recyclage
- Catalogue des projets R&D et des technologies
- Lien avec les réseaux européens: IWA, WssTP, ARREAU, BioRefine
- National nutrient platforms / networks:
 - national Platforms: Netherlands, Germany
 - networks: Nordic Countries, Switzerland
- Echanges internationaux:
 - UNEP (Global Platform for Nutrient Management)
 - North America Sustainable Phosphorus Alliance
 - Japan Council for Promotion of Phosphorus Recycling



ESPP: communiquer et informer

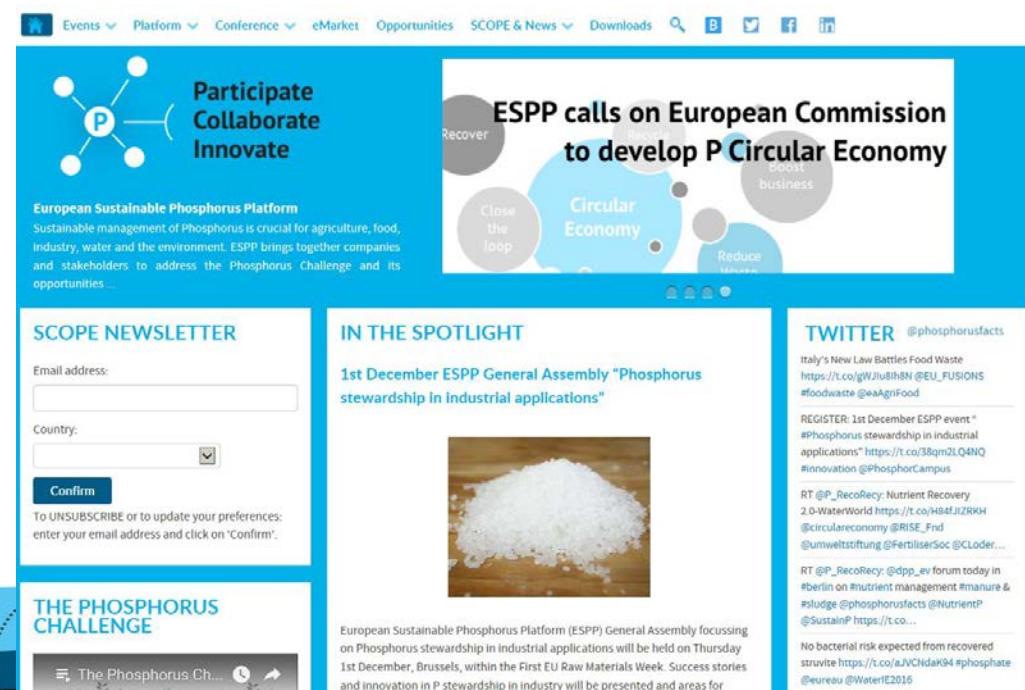
- SCOPE Newsletter:
 - résumés de publications scientifiques
 - conférences
- ESPP eNews
 - réglementation, industrie, terrain
- Site internet www.phosphorusplatform.eu
 - membres
 - projets de R&D
 - exemples de réussite
 - agenda
 - dossiers réglementaires en cours
- Twitter [@phosphorusfacts](https://twitter.com/phosphorusfacts)

European Sustainable Phosphorus Platform June 2016 n° 121

SCOPE NEWSLETTER

Fertilisers	Nutrient recycling
Input to EU Fertilisers Regulation	US EPA Nutrient Recycling Challenge
<i>ESPP has submitted comments on the proposed EU Fertilisers Regulation revision text</i>	<i>Ten innovative manure treatments awarded covering digestion, chemical treatment, separation, stripping.</i>
Fertiliser value of composts and digestates	Canada nutrient removal and recycling
<i>The Improve-P Fact Sheet reviews current knowledge</i>	<i>perspectives, technologies and economics of sewage nutrient removal, recovery and reuse</i>
Proposed biochar fertiliser criteria	Recycling of phosphorus in Norway
<i>ESPP draft Fertiliser Regulation criteria for biochars</i>	<i>Norwegian EPA proposals for national P-recycling</i>
Struvite as an effective fertiliser	Policy
<i>Many further published tests confirm that recovered struvite is an effective fertiliser for a range of crops</i>	European Parliament
Meetings	Agriculture Committee supports nutrient recycling
Struvite 17th June Amersfoort Netherlands	EU Nitrates Directive implementation
<i>recovered struvite REACH Registration exemption, REACH dossier update, struvite EU Fertiliser Regulation criteria, struvite fertiliser value</i>	<i>France State study of 6 Member States concludes that agricultural N and P regulation is a major challenge.</i>
EU Fertiliser Regulation 29th June Brussels	Reports and workshops
<i>discussion of proposed Regulation text, application to recovered nutrient products, composts, digestates</i>	PHORWater workshop Lyon



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Participate Collaborate Innovate

European Sustainable Phosphorus Platform
Sustainable management of Phosphorus is crucial for agriculture, food, industry, water and the environment. ESPP brings together companies and stakeholders to address the Phosphorus Challenge and its opportunities...

ESPP calls on European Commission to develop P Circular Economy

Recover Close the loop Circular Economy Reduce business

SCOPE NEWSLETTER

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THE PHOSPHORUS CHALLENGE

IN THE SPOTLIGHT

1st December ESPP General Assembly "Phosphorus stewardship in industrial applications"

European Sustainable Phosphorus Platform (ESPP) General Assembly focussing on Phosphorus stewardship in industrial applications will be held on Thursday 1st December, Brussels, within the First EU Raw Materials Week. Success stories and innovation in P stewardship in industry will be presented and areas for

TWITTER @phosphorusfacts

Italy's New Law Battles Food Waste <https://t.co/gJJu8lh8N> #EU_FUSIONS #foodwaste @eaAgriFood

REGISTER: 1st December ESPP event "a phosphorus stewardship in industrial applications" <https://t.co/s8pmzLQ4NQ> #innovation @PhosphorCampus

RT @P_RecoRecy: Nutrient Recovery 2.0-WaterWorld <https://t.co/i8sfJzKRKH> @circularconomy @RISE_Fnd @Umweltstiftung @FertiliserSoc @CLOder...

RT @P_RecoRecy: @dpp_eu forum today in #berlin on nutrient management #manure & #sludge <https://t.co/vChdaK94> #phosphate @SustainP <https://t.co/c...>

No bacterial risk expected from recovered struvite <https://t.co/vChdaK94> #phosphate @euereau @WaterEU2016

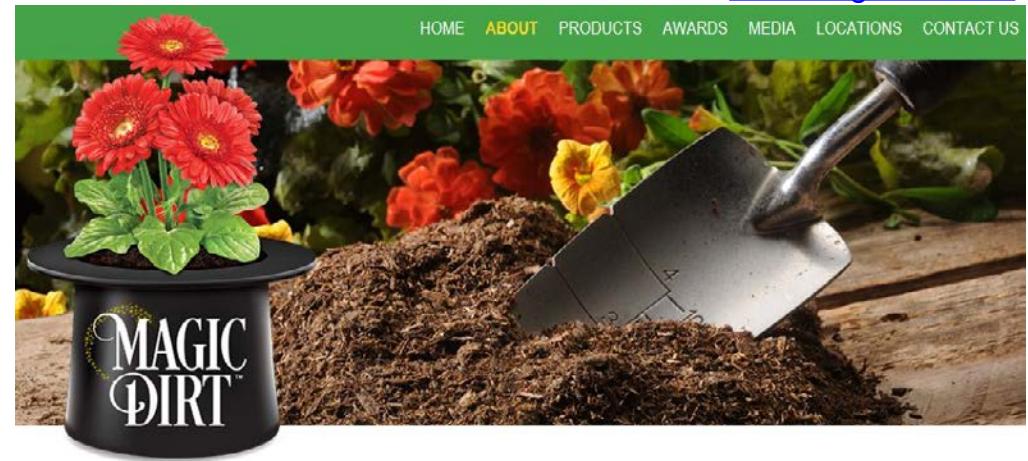
ESPP: réseaux et propositions

- Conférences et présentations
- Réunions de travail thématiques avec les services de la Commission Européenne
- Ateliers dialogue
 - REACH
 - contaminants organiques
 - gestion des lisiers
 - technologies de recyclage
 - réglementation engrais
 - industrie chimique du phosphore
 - fiscalité et économie circulaire
- Prévus:
 - traçabilité
 - standards



Phosphorus recycling success stories

www.magic-dirt.com



ANAEROBICALLY DIGESTED FIBER



The digested fiber in Magic Dirt™ is a byproduct made exclusively from DVO, Inc.'s patented anaerobic digestion (AD) process. Anaerobic digestion is a

WHAT'S TO LIKE

- Independent growth tests confirm Magic Dirt™ equal to or better than leading brands
- For use indoors, outdoors, in containers and mixed with garden soils
- Can be used to grow flowering plants, vegetables and herbs without any added ingredients.
- Certified as Premium Potting Soil by Mulch and Soil Council

INNOVATION CENTER FOR U.S. DAIRY

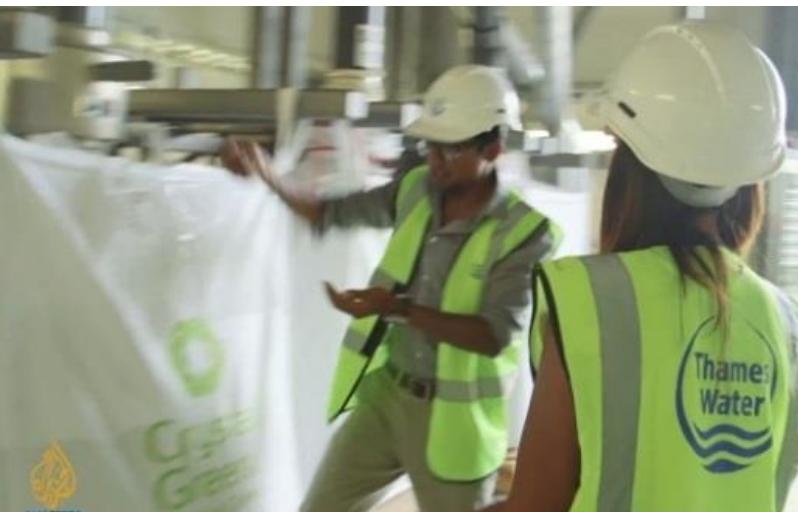
A recent study commissioned by the Innovation Center for U. S. Dairy, which was established by dairy producers, reports that the digested organic fiber that is used in MAGIC DIRT™ "provides an environmental advantage in comparison to peat moss for all indicators examined... (R)eplacing peat moss with dairy digester fiber in the US market could avoid the release of greenhouse gases equivalent to 5.8 million metric tons of CO₂-eq."



Success story: Thames Water – Ostara Pearl®

- Slough municipal wastewater treatment plant, UK
- 150 tonnes Crystal Green® fertiliser / year
- High quality slow release fertiliser

www.ostara.com



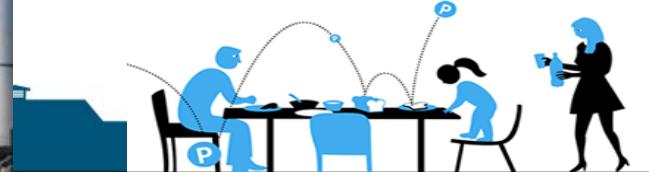
<http://www.aljazeera.com/programmes/earthrise/2014/12/recycling-phosphorus-2014121693225616272.html>

Success story:

Timac: struvite as maize starter fertiliser

- NuReSys recovered struvite from potato processing
- Non-burning, enabling “ultra location” next to roots
- Micro-granulation
- Ammonium addition for nutrient balance

NuReSys - Scope Newsletter n° 121
[http://www.phosphorusplatform.eu/images/scope/
ScopeNewsletter121.pdf](http://www.phosphorusplatform.eu/images/scope/ScopeNewsletter121.pdf)



Success story: COOPRL Brittany pig farmers' cooperatives

- 400 000 t/y manure processed to organic fertiliser products
 - 150 000 t composted poultry litter
 - 150 000 t dried poultry manure
 - 100 000 t pig manure (1 100 farms)
- Adapted to specific crops, exported to other regions of France
- Positive farmer acceptance
- TRAC Emeraude stabling system
 - liquid solid separation in stable
 - reduced ammonia emissions

Supported by EU Investment Plan

<http://www.cooprl.com/en/environmental-solutions>



Success story: *Fibrophos UK*

- Bioenergy and fertiliser (ash) from chicken litter
- Since the 1990's
- Phosphorus, potassium, sulphur, trace elements
- 800 000 t/y chicken litter processed annually
- P shows both immediate and durable crop

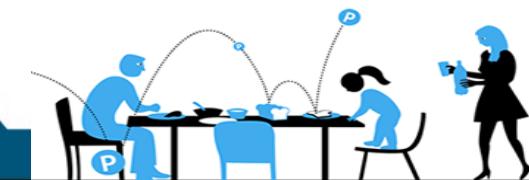
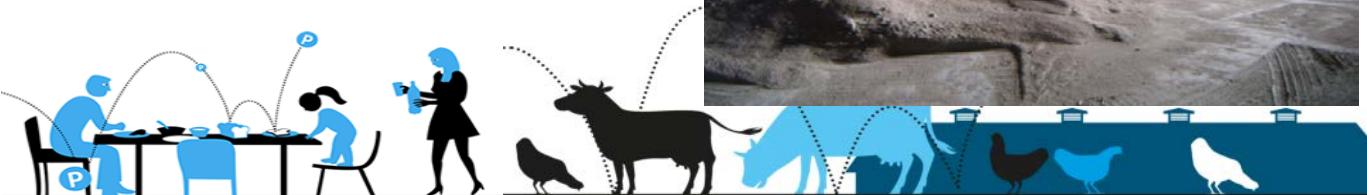
<http://www.fibrophos.co.uk/phosphate-in-fibrophos-fertiliser/>



Success story: *SARIA UK – Kalfos*

- Bioenergy and P-fertiliser (ash) from combustion of animal by-products (MBM)
- Authorised for arable and grazing land
- 12 000 tonnes/year

<http://www.saria.co.uk/>



Success story: *Ecophos P-recycling from sewage sludge ash*

- Pilot plant operational Varna, Bulgaria
- Produce DCP (Di Calcium Phosphate) for fertilisers, animal feed
- Full-scale plant under construction Dunkerque, France
capacity: 200 000 t/y DCP from low grade P-rock and ash
- Contract to treat 60 000 t/y ash from Netherlands (SNB – HVC Groep)
= 4 000 t/y P

See SCOPE Newsletter 111 and www.ecophos.com



A big step for Phosphorus recycling!

The Dutch companies HVC and SNB have signed a contract with EcoPhos (Belgium) for the recycling of Phosphorus from the fly ash of the Sewage Sludge Incineration Plants in Dordrecht and Moerdijk in the Netherlands. With this agreement HVC and SNB have made a big step for the Waterboards in the Netherlands in recycling Phosphorus, an increasingly scarce very important resource.

Unique process

EcoPhos has developed a unique process to valorise Phosphorus from the fly ash of sewage sludge incineration plants into high quality fertilizers. The EcoPhos process leads to well-known existing



Success story: REVAQ sewage treatment Certification

- > 50% Sweden's sewage goes to REVAQ Certified sewage works
- Sludge digestate quality, monitoring, information transparency criteria
- 3000 t/year phosphorus recycled to agriculture

http://www.iea-biogas.net/case-studies.html?file=files/daten-redaktion/download/case-studies/REVAQ_Case_study_A4_1.pdf



Success story: *Friesland Campina milk cooperative, NL*

- Biogas production and P-recovery from manure
- Bonus/malus in milk purchase prices
- Funding support for farmers' manure treatment investments

www.frieslandcampina.com



Success story: WWF Baltic Sea Farmer of the Year Award

www.panda.org/baltic_farmer



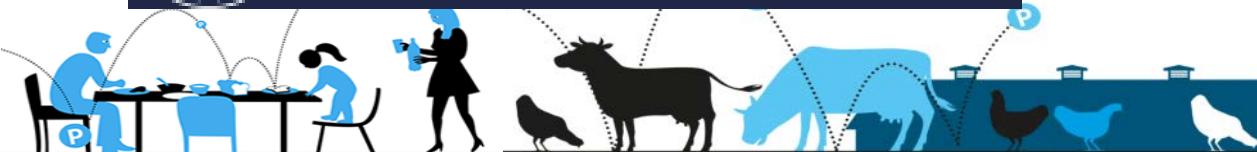
Success story: *NutriTrade Baltic local fish*

- Local fisherman incited to catch cyprinids
 - restore food web (algal grazing zooplankton)
 - remove nutrients from the sea
- Promote new markets for local fish products:
 - recipes, chefs, new processing routes & consumer products
- Biogas production from processing by-products
- Cost: c. 66 €/ kgP removed (not inc. sales)

Launched 2015. John Nurminen Foundation / NutriTrade
<http://nutritradebaltic.eu/pilots/pilot-fish/>



JOHN NURMISEN SÄÄTIÖ





Recycling nutrients from biowastes

Chris Thornton - European Sustainable Phosphorous Platform

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www.phosphorusplatform.eu  [@phosphorusfacts](https://twitter.com/phosphorusfacts)

