



European Sustainable Phosphorus Platform



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Phosphorus and the Circular Economy

Francesco Fatone – Member of the European Sustainable Phosphorus Platform

info@phosphorusplatform.eu

www.phosphorusplatform.eu



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



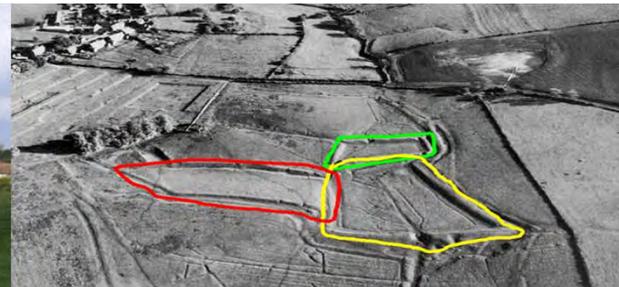
Nutrients, food production and food security

Food brings nutrition

Nutrients are essential to grow food



Traces of ponds from a medieval monastery in the British landscape: the series of cascading ponds treated sewage, safely producing fish in the third pond ... in order to recycle phosphorus





*Without mineral phosphate fertilisers
we could feed
maybe 1/5th
of the current
world population*

Adapted from Dawson et al., Food Policy 2011:
<http://www.sciencedirect.com/science/journal/03069192>

*Without Haber-Bosch
(mineral nitrogen fertilisers)
We could feed half
of the world population*

Fertilizers Europe / Wageningen University

<https://phosphorusalliance.org>





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Pressure to reduce nutrient losses

- *Urban Waste Water Treatment Directive 1991/271*
- *Nitrates Directive 1991/676*
- *Water Framework Directive 2000/2000*
- quality objectives 2015 / 2021 / 2027
- *Groundwater Directive 2006/118*
- phosphorus on monitoring list (2014)

- *Phosphorus is first cause of (non-morphological) quality status failure under the EU Water Framework Directive*
- *55% of UK rivers and 74% of lakes exceed P level for good ecological status*

ENDSEurope 3 July 2018

News

Threat of legal action after damning EU water report

The European Commission has warned that governments may face legal action over a failure to implement EU water quality legislation, as a report published on Tuesday

EEA Report | No 7/2018

European waters

Assessment of status and pressures 2018

ISSN 1977-8449





Pressure to reduce nutrient losses

Proposed new CAP (Common Agricultural Policy)

- EU Commission proposal 1 June 2018
- “Farm Sustainability Tool for Nutrients” (FaST)
 - information on farm, crops, management
 - complete nutrient budget
- Conditionality requirements:
 - control of diffuse pollution by phosphates
 - nitrate leakages
 - ... buffer strips, soil management ...

https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/future-cap_en





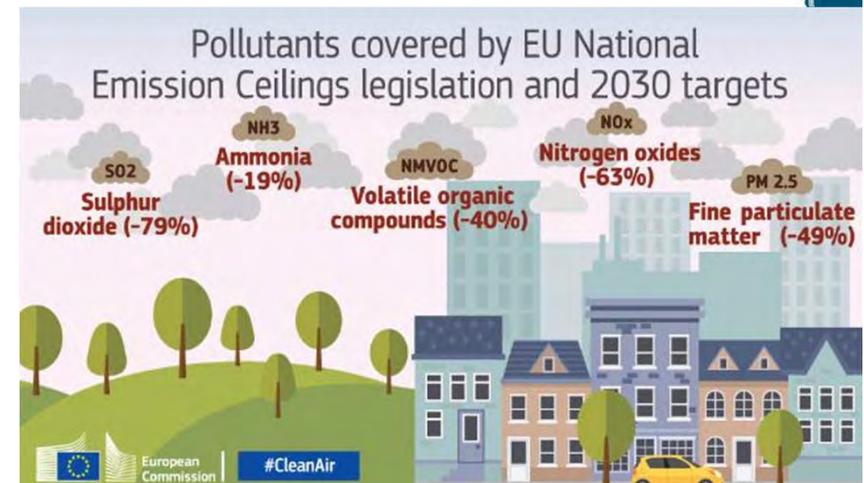
Pressure to reduce nutrient losses

National Emissions Ceilings Directive (NECD) revision

- ammonia emissions

- Ammonia → particulates → health impacts
- 98% of ammonia emissions from agriculture
- 2016 NECD revision:
 - 19% reduction target for ammonia by 2030

<http://ec.europa.eu/environment/air/pollutants/ceilings.htm>





Pressure to recycle phosphorus Switzerland

- *2016 Decree makes phosphorus recovery obligatory by 2026 from sewage sludge incineration ash* and meat and bone meal ash*
 - * *Switzerland banned land use of sewage biosolids in 2006*
- *Still under discussion:*
 - *%P recovery to be required*
 - *recycled fertiliser criteria*

Scope Newsletter n°118 <http://www.phosphorusplatform.eu/scope118>
Scope Newsletter n°121 <http://www.phosphorusplatform.eu/scope121>



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 (p. ex. amiante, déchets de chantier contenant des hydrocarbures...

Pressure to recycle phosphorus

Germany

- *Legislation May 2017 makes phosphorus recovery obligatory*
 - within 12/15 years
 - for all wwtp > 50 000 p.e.
 - if sewage sludge P > 2% of dry matter
- *Interpretation under discussion:*
%P depends on organics: change with hydrolysis, digestion → will favour mono-incineration
- *Requires to either recover >50% of P or to reduce sludge P to <2%*
- *Land sewage biosolids use banned for larger sewage works, and lower contaminant limits will reduce spreading for smaller works*



Bundesministerium
für Umwelt, Naturschutz
und nukleare Sicherheit

National | Verordnungen | AbfKlärV

Verordnung zur Neuordnung der Klärschlammverwertung
Klärschlammverordnung



Verordnungstext beim Bundesanzeiger
04.10.2017

Neue Klärschlammverordnung in Kraft





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Pressure to recycle phosphorus

Baltic

- *HELCOM:*
8 EU Member States, plus Russia and the EU
- *“Recommendation” March 2017 = obligation*
 - *maximise phosphorus and other useful substance recycling*
 - *regular State reporting on measures taken to implement this*
- *Ministerial Declaration March 2018:*
 - *define Nutrient Recycling Strategy by 2020*





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Pressure to recycle phosphorus



Government Offices of Sweden

Sweden

- *13 July 2018: Government announces 'enquiry' into*
 - *ban on agricultural use of sewage sludge*
 - *phosphorus recycling regulation*

<http://www.government.se/press-releases/2018/07/inquiry-to-propose-ban-on-spreading-sewage-sludge-on-farmland-and-a-phosphorus-recycling-requirement>

- *Currently working on regulatory proposal*
- *Conclusions expected mid 2019?*





P recycling potential in EU-27

[kton P/year]	Total	Recycled	Potential
Sewage sludge	297	115	182
Biodegradable solid waste	130	38	92
Meat & bone meal	128	6	122
Total	427-555	153-160	274-396
Manure recycling =	1 736		
Mineral fertiliser use =	1 448		

Van Dijk et al. "Phosphorus flows and balances of the European Union Member States", Science of the Total Environment Volume 542, Part B, 15 January 2016, Pages 1078-1093 <http://dx.doi.org/10.1016/j.scitotenv.2015.08.048>

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

EU Fertilisers Regulation

Flagship of Commission 'Circular Economy Package'

Ambitious:

- *covers all fertilisers (mineral & organic), plant materials, composts & digestates, soil amendments, growing media, biostimulants, liming materials, etc.*

Precedent: first EU Product Legislation to confer "End-of-Waste" status

Commission proposal March 2016 <http://ec.europa.eu/DocsRoom/documents/15949>

Parliament position October 2017 <http://data.consilium.europa.eu/doc/document/ST-13610-2017-INIT/en/pdf>

Council position December 2017 <http://data.consilium.europa.eu/doc/document/ST-14010-2017-REV-1/en/pdf>

Final agreed regulatory text December 2018 <http://data.consilium.europa.eu/doc/document/ST-15103-2018-INIT/en/pdf>





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EU Fertilisers Regulation *proposal*

- *Future markets will have both “National” and CE-mark fertilising products (plus materials used under “waste” legislation or similar e.g. sewage biosolids, manures ...)*
- *Food & beverage companies & supermarkets may specify use only of EU-label fertilisers and soil amendments in crop purchasing or sustainability criteria ?*
- *EU Regulation will open the European market for recycling technologies*





Pressure to recycle nutrients = *business opportunities*

"La Belle Bouse" (beautiful cowpat)

- Lyon based startup
- Locally sourced organic fertiliser for households from cattle manure
- "matured for 9 months like a great cheese"

<http://www.labellebouse.fr/>





European Sustainable Phosphorus Platform

<http://www.phosphorusplatform.eu/members>

ESPP: a coalition for action

- **Wide objectives:**
 - phosphorus stewardship
 - global food security
 - circular economy
 - environmental protection
 - healthy diet and food safety
- **Bringing together:**
 - water & waste industries,
 - mineral and organic fertilisers, chemicals,
 - P-recycling technology suppliers,
 - national & regional governments,
 - knowledge institutes ...



- **Actions:**
 - vision & awareness
 - stakeholders & networking
 - dissemination
 - policy and regulation dialogue

More information: www.phosphorusplatform.eu





<http://www.phosphorusplatform.eu/members>

How ESPP operates

Legally established
not-for-profit association

→ *important for transparency,
clarity of decision making,
representation*

- statutes are public <https://www.phosphorusplatform.eu/platform/about-espp>
- EU Transparency Register no. 260483415852-40 <http://ec.europa.eu/transparencyregister/>

100% membership funded

→ *key to credibility, independence*

- approx. 40 paying members to date: companies, R&D institutes or projects, cities / regions / governments
- *balance between different interests and industries*
- *in touch with reality (payment = commitment)*





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Nutrient platforms and networks worldwide

Netherlands 2010 <http://www.nutrientplatform.org/>

Germany 2015 www.deutsche-phosphor-plattform.de

Baltic: ESPP works with Baltic Sea Action Group www.bsag.fi

ESPP European Sustainable Phosphorus Platform 2013

North America Sustainable Phosphorus Alliance (SPA) 2017
(launched as NAPPS in 2015) <https://phosphorusalliance.org/>

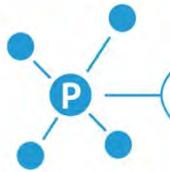
Japan PCPR 2011 (Phosphorus Recycling Promotion Council)

Global Partnership for Nutrient Management (UNEP)
<http://www.unep.org/gpa/what-we-do/global-partnership-nutrient-management>



**Sustainable
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Email Secretary: Chris Thornton

info@phosphorusplatform.eu

Website: www.phosphorusplatform.eu

News  [@phosphorusfacts](https://twitter.com/phosphorusfacts)



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