



European Sustainable  
Phosphorus Platform

Italian Phosphorus  
Platform



UNIVERSITÀ  
POLITECNICA  
DELLE MARCHE



Green & Circular Economy  
6-9 Novembre 2018  
Rimini Italy

IN CONTEMPORANEA CON  
**KEY ENERGY**



## **BEACON CONFERENCES / EVENTS (CONFERENZE FARO)**

### **EUROPEAN NUTRIENT EVENT**

### **TOWARDS CIRCULAR ECONOMY OF PHOSPHORUS AND**

### **OTHER NUTRIENTS**

**Organized by:** *Ecomondo Scientific Technical Committee, European Sustainable Phosphorus Platform (ESPP), HERA Group, Università Politecnica delle Marche, EU-Horizon2020 SMART-Plant, Italian Phosphorus Platform, Utilitalia*

Phosphorus is a critical raw material, non-renewable resource, non-substitutable for food production, essential for agriculture and directly linked to food security, as well as being important in a range of other industrial and technical uses. Europe is severely dependent on extra-EU mines and the most important use of imported phosphorus in Europe is for mineral fertilizers. On the one hand, recovery from municipal wastewater (sewage sludge), animal manure and other biowaste sources can cover most of the EU demand. On the other hand, inefficient use of phosphorus causes environmental damage. At EU level the European Sustainable Phosphorus Platform and several member states are promoting and regulating phosphorus recovery from municipal wastewater and other waste and residue biomass flows. In Italy the recently founded phosphorus platform is boosting national policies and regulations to promote sustainable management of this critical raw material. This strategic action will therefore present and discuss the EU framework and the actions in place in Italy for sustainable phosphorus management.

#### **Chairmen**

Francesco Fatone (ECOMONDO CTS and Horizon2020 "SMART-Plant" Coordinator)

Ludwig Hermann (European Sustainable Phosphorus Platform)

Alberto Zolezzi, Massimo De Rosa, Promoters of the Italian Phosphorus Platform

Claudio Anzalone, HERA Group



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	8 november <i>Neri 2 Room South Hall</i>	PAV. ...
10.00-18.00	<b>3<sup>rd</sup> EUROPEAN NUTRIENT EVENT - TOWARDS CIRCULAR ECONOMY OF PHOSPHORUS AND OTHER NUTRIENTS</b>	

## Programme

### DAY 1 - 8 November 2018

**10.00 - 10.30 Registration and welcome coffee (*provided by HERA Group*)**

**10.30 - 12.45 Opening Plenary - STATE OF THE ART AND REGULATORY FRAMEWORK**

Welcome address by Salvatore Micillo, *Undersecretary to the Italian Minister of Environment and Protection of Land and Sea*

(15') Tullio Berlinghi - Italian Ministry of Environment and Protection of Land and Sea  
*Phosphorus and nutrient management in the national context of circular economy*

(15') Pavel Misiga - European Commission – DG RTD - Unit Eco-Innovation  
*EU support to R&I on circular economy of nutrients*

(15') Ludwig Hermann - European Sustainable Phosphorus Platform (ESPP)  
*Nutrient circular economy: state of the art in the European Union and Mediterranean-Area*

(15') Daniel Frank - German Phosphorus Platform (DPP)  
*Phosphorus recovery and reuse in Germany after 1 year of the new regulatory framework*

(15') Lorenzo Bardelli - ARERA- The Italian Regulatory Authority for Energy, Networks and Environment  
*Regulatory framework of nutrient and resource recovery and valorization from water cycle*

(15') Emilio Caporossi – Partnership HERA-IREN-SMAT  
*Innovative utility partnership to reach economy of scale for phosphorus recycling: techno-economic assessment*

(15') Aurora Seco - Coordinator of the EU Innovation Deal and University of Valencia  
*Water and nutrient circular economy policy support – The Innovation Deal experience*



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(15') Aikaterini E. Christodoulou – European federation of national water services – EurEau  
*Nutrient management in EU water utilities: the EurEau perspective European federation of national water services*

(15') Panel discussion

Chair: Francesco Fatone

Questions, suggestions and discussion about the establishment of the Italian Phosphorus Platform

**12.45 - 14.00 Light lunch**

**14.00 - 15.20 PHOSPHORUS RECOVERY TECHNOLOGIES**

(15') Christian Kabbe – ISLE Utilities – Germany

*Phosphorus recovery from sewage sludge - from discussion to implementation*

(8') Matthew Kuzma - OSTARA

*PEARL and WASSTRIP success stories in struvite recovery and recycling in Europe and Med area*

(8') Rudolf Bogner - CNP Cycles

*AirPrex success stories in nutrients recovery and recycling in Europe and Med area*

(8') Marisa Cunha - Veolia

*Phos4You and PhosForce - Upgrading phosphorus recovery*

(8') Luca Pedrazzi - Suez

*Phosphogreen for struvite recovery – Suez European case study*

(8') Yariv Cohen - EasyMining

*Ash2Phos for P recovery: process and forthcoming full-scale application in Europe*

(8') Tanja Schaaf - Outotec

*Sludge incineration and phosphorus recovery by AshDec process: success stories in nutrient recovery from ashes and recycling in Europe and Med area*

(8') Nicolas Morales - Aqualia

*The role of nutrients in the bioenergy production*



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*(10') Panel discussion*

Chair Claudio Anzalone and Christian Kabbe: Questions and discussion about challenges and future perspectives of Phosphorus recovery technologies

**15.20 - 15.45 Coffee Break** *(provided by HERA Group)*

**15.45 - 17.00 NUTRIENTS RECYCLING and WATER REUSE: SUCCESS STORIES AND ACTION PLAN**

(10') Manuel Iseri - Assofertilizzanti

*The phosphorus issue in the new Regulation of fertilizers: the vision of Assofertilizzanti*

(10') Donato Rotundo - Confagricoltura

*Efficient use of phosphorus in agriculture and need for recovered sources*

(10') Cristian Argenta - ITALPOLLINA

*Phosphorus recycling in organic fertilisers*

(10') Gabriele Boccasile, Lombardy Region

*Nutrient and water recycling through the management of manure: the case history of Lombardy Region*

(10') Andrea Lanuzza – CAP Holding

*Techno-economic analyses of sludge management and phosphorus recovery from municipal wastewater in Milan metropolitan area*

(10') Pierpaolo Florian - Alto Trevigiano Servizi

*15 years after the first Italian struvite recovery plant in a municipal WWTP. Lesson learnt and perspective of the water utility*

(15') *Panel discussion* Chair Ludwig Hermann (ESPP): Perspectives and actions

**17.00 - 17.10 Q&A and conclusions**

**17.10 - 18.00 Poster session and drinks**



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**The second day will focus on nutrient recycling and stewardship research, development and innovation (R&D&I) and will:**

1. Bring together European, national and company funded nutrient research projects identify synergies and share results;
2. Present (Mediterranean) R&D research activities focused on combined water reuse and nutrient recycling;
3. Networking of leading nutrient recycling projects across Europe with technology suppliers and users;
4. Present European Commission perspectives on R&D&I;
5. Discuss the research needs for nutrient sustainability in the new EU research framework programme 9 (FP9, Horizon Europe), within the five societal challenges and/or a possible Mission on nutrients.

**Targeted stakeholders:** researchers, R&D projects and institutes, company R&D department representatives, European Commission EASME, DG RTD, DG AGRI, and DG EV, EIP AGRI, EIP WATER, EIT Raw Materials, funding bodies HORIZON2020, LIFE, INTERREG, SME INSTRUMENT

## DAY 2 - 9 November 2018

### Programme

**9.00 – 10.00 Registration European Nutrient Event Day 2**

**10.00 – 10.50 Opening Plenary – where we come from**

Ludwig Hermann – president European Sustainable Phosphorus Platform (ESPP)  
*Welcome*

Vincenzo Gente - EC-EASME  
*Overview of nutrient related H2020 and Life projects in Europe*

Annika Eskusson - European Commission, DG RTD  
*EU roadmap to sustainable management of nutrients*



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Kimo van Dijk - research project manager European Sustainable Phosphorus Platform (ESPP)

*Inventary of 100++ nutrient related projects and research underway - summary of 1st (Berlin 2015) and 2nd (Basel 2017) European Nutrient R&D events*

*Questions and discussion*

**10.50 - 11.20 Coffee break (offered by HERA Group)**

**11.20 - 12.40 Current nutrient research – what is going on projects speed date presentations**

Speed date presentations of about 25 key nutrient research projects. Representatives of selected projects present their specific approach and share results. Projects from different sectors covering different topics, waste flows and countries. Projects presented are a selection of all nutrient related research going on in Europe and covered by the ESPP catalogue of nutrient recycling and stewardship research projects:

[www.phosphorusplatform.eu/R&D](http://www.phosphorusplatform.eu/R&D)

Projects that will give a presentation:

**H2020** funding: Circular Agronomics, HYDROUSA, INCOVER, PeGaSus, P-Al/Fe-WTR, Run4Life, SABANA, SaltGae, SYSTEMIC, Water2REturn

**INTERREG** funding: BEST, No\_Waste, NuReDrain, SEABASED

**LIFE** funding: DOP, MEMORY, Newbies, Trialkyl, Vitisom

**Other** funding: BiofuelcellAPP, HTC, MIND-P, PARFORCE, RAVITA, ViviMag

*Questions and discussion*

Ludwig Hermann - President European Sustainable Phosphorus Platform (ESPP)

*Introduction to afternoon work objectives and method: discussion of R&D needs related to nutrients in FP9 and possible "Mission" on nutrients, based on proposed Mission outline developed by SYSTEMIC / ESPP / International Nitrogen Management System (INMS) / Biorefine Cluster Europe*

**12.40 - 13.45 Light lunch**

**13.45 - 15.00 Future challenges in nutrient research, development, innovation and implementation**

Small group discussions led by R&D projects underway and discussing research needs (in particular with reference to FP9) in different targeted areas. Discussion leader(s) provide



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for each table a short 3 minutes introduction then moderate and ensure reporting. The following tables and topics:

- 1. Opportunities and challenges for scaling-up innovative technologies for large scale nutrient recovery?**  
Table leader: Andrea Goglio - BiofuelcellAPP project
- 2. How to develop and implement a food chain circular economy model for nutrients?**  
Table leader: Giuliana D'Imporzano - LIFE-DOP project
- 3. Growing sustainable business opportunities with bio-based fertilisers?**  
Table leader: Barbara Anton - INCOVER project  
Presentations by: Peder Gregersen - Center for Recycling, and Frances Helen Blaikie - Danish Technological Institute
- 4. Opportunities and challenges in the combination of water reuse, nutrient recycling and fertigation?**  
Table leader: Aurora Seco - LIFE-MEMORY project / Innovation Deal on Sustainable Wastewater Treatment
- 5. How to develop business cases for diffuse phosphorus and nitrogen source nutrient removal, recovery and reuse?**  
Table leader: Pieter Van Aken - NuReDrain project
- 6. Opportunities and challenges of water reuse and nutrient recovery from domestic wastewater based on decentralized treatments and/or segregated streams**  
Table leader: Nicolas Morales Pereira - Run4Life project  
Presentations by: Simos Malamis - HYDROUSA project
- 7. How can manure and digestate nutrient recovery routes and products fit better into market demand?**  
Table leader: Inge Regelink - SYSTEMIC project
- 8. The role of iron in phosphate recovery: good or bad?**  
Table leader: Leon Korving - ViviMag project
- 9. Opportunities and challenges in food industry and slaughter houses (wastewater) nutrient recycling?**  
Table leader: Robert Reinhardt - Water2REturn project

**15.00 - 15.30 Coffee break (offered by HERA Group)**

**15.30 - 17.00 Plenary panel discussion about nutrient research needs in next Horizon Europe (FP9) with a panel of the table leaders and the morning speakers, DG RTD and EC EASME.**



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**Discussion themes:**

1. How do nutrients fit in the Horizon Europe pillars? How nutrient research needs identified during the tables are relevant to the five FP9 thematic challenges: Health, Inclusive and Secure Society, Digital & Industry, Climate - Energy & Mobility, Food & Natural Resources.
2. What other EU (R&D) funding instruments are relevant for the nutrient research community?
3. What should a Mission on Nutrients look like? What should be included?
4. How does a mission on nutrients fit in with potential/proposed other missions on food safety, water etc?