



# Newsletter

## 01/08/14

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### INTRODUCTION

On September 1<sup>st</sup> 2013, PHORWater project came out under the LIFE + programme. It is going to last for three years, with a total budget of 1,274,064 euros with a support from the European Commission.

The main objective of PHORWater is to increase awareness of the environmental problem of phosphorus giving an innovative solution for the recovery of this nutrient at the wastewater treatment plants (WWTPs) in order to minimize its environmental problem. The project is focused on the development of a good practice manual to maximize phosphorus recovery at the WWTPs as well as showing the advantages of its recovery as struvite.

The purpose of the launch of this newsletter is to report at time the activities that are being carried out and the results obtained in the framework of the LIFE + programme. This newsletter also serve as social media between all institutions and social agents involved.

**Laura Pastor Alcañiz**  
**PHORWater Project Manager**  
**Depuración de Aguas del Mediterráneo**

## LIFE+ PROGRAMME

LIFE+ is the EU's funding instrument to support the Members States in order to develop projects which protect the environment and conserve nature.

This programme began in 1992 and has progressed in different phases.

The first phase, LIFE I, took place between 1992 and 1995.

The second phase, LIFE II, was developed between 1996 and 1999.

The third phase, LIFE III, took place between 2000 and 2006.

The fourth phase, LIFE +, ran from 2007 to 2013.

The programme is currently undergoing its LIFE (2014-2020) phase.

During this period, LIFE Programme has funded nearly 4000 European projects, giving over 3 billion euros.

<http://ec.europa.eu/environment/life/index.htm>

## PROJECT

### PHORWater Integral Management Model for Phosphorus recovery and reuse from Urban Wastewater

The phosphorus from the influent of the wastewater treatment plant is biologically removed from the water line and concentrated at the waste activated sludge (WAS) produced, so it can be removed from the sludge for its recovery as crystallized struvite.

In this way it is expected to enhance the process of biological phosphorus removal at the water line of the WWTP, retrieve the phosphorus removed as struvite through the development of a crystallization reactor and increase the availability of phosphorus for agricultural use.

PHORWater project aims to give an answer to the environmental problem of phosphorus by

reducing the amount of phosphorus discharge and the associated problems of eutrophication, obtaining an alternative source of phosphorus that could reduce its mineral extraction.

The project will take place at the Calahorra WWTP facility (La Rioja, Spain), where it will be implemented the best configuration for biological phosphorus removal with a crystallizer reactor at the side streams of the sludge line in order to recover phosphorus as struvite and analyze the feasibility of the obtained product as agricultural fertilizer.



**Cidacos WWTP (Calahorra, La Rioja)**

## PARTICIPANTS

## PROJECT MANAGER

### DEPURACIÓN DE AGUAS DEL MEDITERRÁNEO (DAM)

DAM is the PHORWater project manager.

The main activity of DAM is the provision of services related to management, operation, maintenance and conservation of wastewater treatment plants (WWTPs) and sewers.

Its experience in the operation and maintenance of numerous WWTPs (more than 200 facilities managed currently) provides a key technical knowledge to the project.

More information:

<http://www.dam-aguas.es>

## PARTNERS

### CALAGUA

University of Valencia through CALAGUA Research Group collaborates in the project. CALAGUA has been working for decades in wastewater treatment and has extensive experience in the removal and recovery of nutrients.

More information:

<http://www.aguas-residuales.es/>

### LAGEP

The Laboratory of Automation and Process Engineering (LAGEP) from Claude Bernard University of Lyon (France), also collaborates in the project.

The process engineering research group has an extensive experience in the processes of precipitation / crystallization of different types of industries and wastewater treatment.

More information:

<http://www.lagep.cpe.fr/>

## ACTIONS

1. **Integral management of the WWTP** for optimal phosphorus recovery.

2. **Design, construction and start-up of the phosphorus crystallization** process into struvite.

3. **Implementation on the phosphorus recovery** at the pilot plant and struvite production

4. **Validation of obtained struvite** as fertilizer.

6. **Study of economic viability** of struvite's recovery from the wastewater process.

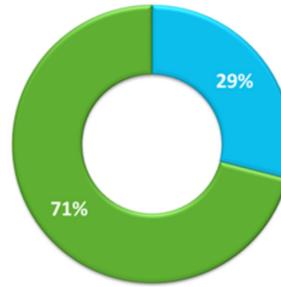
7. **Communication and diffusion** of the project.

# PROJECT FOLLOWING & COMMING DUTIES

**Task 1. Integral management of the WWTP for optimal phosphorus recovery.** After finishing the implementation of the modifications at the WWTP, the elutriation control algorithm is scheduled to finish on September 2014.

**Task 2. Design, construction and start-up of the phosphorus crystallization process.** This task began on April 2014, and includes the following tasks:

- Crystallizer and auxiliary elements design
- Control algorithm design and development.
- Supplier search and offer requests
- Phosphorus recovery plant construction and installation
- Validation of the installation.



■ Executed ■ Remaining

## NEWS

### PHORWater project part of the LIFE + Programme, kicks off at Calahorra, La Rioja



The first coordination meeting was held at the Cidacos WWTP at Calahorra, La Rioja, on October 10<sup>th</sup> 2013, where the new technology is going to be implemented.

The meeting was attended by all the project partners, DAM as project coordinator, CALAGUA Research Group from the University of Valencia to collaborate on the project, along with the Laboratory of Automation and Process Engineering (LAGEP) from Claude Bernard University of Lyon (France) which followed the meeting by videoconference. Staff of Cidacos WWTP also participated in the meeting.

Phosphorus is an increasingly scarce resource, so its recovery has become ever more important in recent years. A large proportion of phosphorus ends up in wastewater, so the recovery of the

phosphate present therein seems an interesting option.

The project foresees that up to 30% of phosphate entering WWTP can be recycled, which will reduce the phosphorus content of the sludge. It is also expected that this new technology will also reduce by 10% the production of sludge and by 15% the operating costs.

The members of the project, in line with the objectives and the current concerns of the European Commission, had participated in the consultative communication on the sustainable use of phosphorus that the European Commission has recently launched. The consultative communication purpose is to draw attention to the sustainability use of phosphorus and initiates a discussion on the current situation and the measures to be considered.

### PHORWater LIFE+ launches Project website

The European PHORWater Project under LIFE+ programme, launches its new official web page this week, where you can find the latest news and developments of the project, as well as background information on the LIFE + programme, and links to the websites of the project leader Depuración de Aguas del Mediterráneo (DAM), and its partners, CALAGUA Research Group at the University of Valencia and LAGEP group from the University Claude Bernard Lyon I and other related websites.

The project's website awareness the importance of sustainable use of phosphorus as increasingly scarce and limited natural resource, and shows the process of operation and new technology of phosphorus recovery in a WWTP.

There you can find the latest news and developments of the project and gradually will be updated information on the progress of the project that began last September until the end of his execution in 2016.

You can access the official website of PHORWater project through the following link:

<http://www.phorwater.eu>



## NEWS

### PHORWater project Meeting in the META 2014 Alicante

The IX Meeting META 2014, took place on 18<sup>th</sup> to 20<sup>th</sup> June 2014 at the University of Alicante. This scientific meeting was organized by the Water and Environmental Sciences Institute, in collaboration with the Chemical Engineering Department from the University of Alicante (IUACA).

DAM with CALAGUA research group from Valencia and LAGEP research group from Lyon, participated with the presentation of the development of the European LIFE+ PHORWater project.

Several research groups and related water companies of our country also attended the event, where there were shown more than 100 communications lines

and major advances in current R&D.

The topics addressed at the event were emerging contaminants, physic-chemical treatments, membrane processes, biological treatments, industrial water treatments, and waste and sludge treatments, other configurations and processes, contamination assessment, social aspects, regeneration and reuse.

The event will also went through the main developments concerning the upcoming water-related calls within the Horizon2020 programme.

**meta**2014Alicante

XI Reunión de la Mesa Española de Tratamiento de Aguas

## AGENDA

### SPS-Sustainable Phosphorous Summit

**1<sup>st</sup>-3<sup>rd</sup> Sept 2014**  
**Le Corum, Montpellier**

On 1<sup>st</sup> to 3<sup>rd</sup> September 2014 will take place at Le Corum Montpellier, France, the Sustainable Phosphorus Summit.

Scientists and stakeholders from around the world will gather to exchange information across different disciplines in order to improve efficiency and better use of phosphorus throughout its cycle by encouraging greater public awareness of this issue.

The event focuses on participatory co-learning and research. The

PHORWater project, "Sustainable Integrated Management Model for Phosphorus recovery and reuse from Urban Wastewater" will be present by a poster exhibition in which the results obtained to date are described.



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**If you wish to unsubscribe, you can do it [here](#).**

LIFE+ PHORWater Newsletter is part of awareness raising and dissemination of project results LIFE12 ENV/000441 "Integral Management Model for Phosphorus recovery and reuse from Urban Wastewater", which is beneficiary Depuración de Aguas del Mediterráneo and where participate as partners and co-funders the research groups CALAGUA and LAGEP. The project is 50% funded by the European Commission.