

## PROJECT DESCRIPTION

The LIFE NEWEST project has allowed the design and implementation on a real scale of a new technology based on natural-based coagulants for its use in tertiary treatment of urban and industrial wastewaters. This technology has been designed to replace the inorganic-based coagulants currently in use in WWTP, which are toxic and dangerous products, also improving the efficiency removal of the phosphorus content at effluents. The sludge generated out of the process has been characterized and reused in biomethanization processes in order to produce biogas and improve its subsequent application in agriculture.



### MAIN OBJECTIVES

- The use of corrosive and dangerous inorganic coagulants has been completely eliminated in urban and industrial wastewater treatments, replacing them by natural products of plant origin.
- The replicability and transfer of the proposed technology and the dissemination of the results obtained in the EU have been suitably ensured.
- A business plan focused on the new validated technology has been successfully completed and implemented, so the new product has been manufactured on a full scale and placed in market even before the end of the project.
- An efficient, cost-effective and environmentally sustainable solution has been provided for the removal of total phosphorus content in urban and industrial wastewaters, in line with the Directive 2000/60/EC and with the priorities of the LIFE Program.



### PROJECT BUDGET

2.260.073 €

### EU CO-FUNDING

1.347.627 €



### PARTNERS



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THE LIFE PROJECT

INNOVATIVE TECHNOLOGY  
FOR THE  
ENVIRONMENT



LIFE 16 ENV/ES/000456  
PROJECT CO-FINANCED BY THE LIFE PROGRAMME  
OF THE EUROPEAN UNION

## PROJECT CONTEXT

### WHAT IS LIFE ABOUT?

LIFE is the EU's financial instrument supporting environmental, nature conservation and climate action projects throughout the European Union.

### BACKGROUND

Phosphorus has changed from being a nutrient to being a global pollutant.

Excessive nitrogen and phosphorus contribution favors the 'eutrophication' of the water.

To reduce the phosphorus level in effluent of industrial and urban WWTPs, the inorganic coagulant "ferric chloride" is commonly used. It is a corrosive and a dangerous product to handle.

### WHAT SOLUTIONS DOES THE PROJECT PROPOSE?

To reduce the phosphorus levels in the effluents of WWTP using a new technology based on natural-based coagulants, safe for people and environmentally friendly.



## PROJECT DURATION

The NEWEST project lasted 48 months, beginning its tasks in September 2017 and ending in August 2021. During this period of time, preparatory actions, technical actions (including implementation, technology transfer and dissemination among others), management and monitoring actions have been carried out.

## PARTICIPANTS

### SERVYECO

As a coordinator of the project and technology-based company, has been in charge of the development of the implemented technology. **SERVYECO** owns a national accredited laboratory and a chemical production facility of 7.000 m<sup>2</sup> in which more than 10.000 tons/year of chemical products are supplied in both national and international territories for the public and private industrial sectors. The main target of **SERVYECO** in the project has been the design and development of the manufacture prototype for the organic polymer of plant origin. This production has allowed **SERVYECO** to provide with the developed product at different wastewater treatment plants (Lloc nou d'en Fenollet, Beniganim, Ontinyent and Canals) during the implementation phase.

### EDEVASA and GOMSL

Belong to the business group Global Omnium which is made up of 16 companies specialized in different areas related to water management. Currently, they manage more than 350 wastewater treatment facilities nationwide, which represent a volume of treated water of 260 hm<sup>3</sup>/year, providing service to 2.7 million people and offering a defined list of the techniques used in the present and the problems and limitations encountered. The role of **EDEVASA** and **GOMSA** in the project has been involved with the operational management of the different **WWTP** involved in the project (Lloc nou d'en Fenollet, Beniganim, Ontinyent and Canals) and the monitoring of the experimental results obtained.

## CONCLUSIONS



The **LIFE NEWEST** project has enabled the design and implementation of a new technology, based on natural-based coagulants on an industrial scale, allowing replacing the inorganic products used per today, which are toxic and dangerous to handle. Therefore, once concluded the implementation phase, it has been shown that the new developed technology is suitable for the chemical precipitation of phosphorus in **WWTPs** that have partly industrial water contribution. Moreover, the products of the **BEWAT** Series improve significantly the effluent water quality in terms of reduction of conductivity and high efficiency removal of both parameters; Suspended Solids (SS) and Chemical Oxygen Demand (QOD).

### ADDITIONAL RESULTS

- The developed products in this project make it possible to reduce the concentration of chlorides and iron content in the effluent water if compared to the use of ferric chloride.
- This new technology improves the sludge settling velocity in the secondary clarifiers, allowing, in turn, to obtain additional technical advantages such as:
  - A higher concentration rates of the recirculated sludge, with the consequent energy savings involved in the operational pumping hours.
  - An improved effluent water quality obtained due to the reduced content of Suspended Solids (SS) present in the supernatant.
  - A higher efficiency rates of the secondary settling units.
- **BEWAT** improves the operational management of the **WWTP's** sludge treatment line by increasing the content yield of the dry matter at the flotation and sludge dewatering units, reducing in turn, the solid load contribution to the head of the plant.
- Lastly, the new technology implemented allows significant savings related with the reduction of the volume of chemical reagents consumed due to the increased dryness of the sludge generated in the process