



VALORASTUR PROJECT



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Eco-efficient wastewater treatment: energy optimization and beneficial use of sewage sludge for innovative environmental applications in Asturias

Project Description

VALORASTUR project is focused on the development of new processes and technologies that lead to an optimal operation of Wastewater Treatment Plants (WWTPs), as well as reduce the energy consumption and waste production (particularly sludge) simultaneously. Furthermore, the main purpose of the project is the beneficial use of sewage sludge to obtain carbon based materials to be used in different environmental applications: wastewater treatment, gas cleaning, soil amendment and energy production. The research activities also aim to promote initiatives that avoid, in the near future, landfill disposal of large volumes of sewage sludge whose characteristics would not allow its use as fertilizer.

Currently, sewage sludge from municipalities and industries in Asturias contains a high content of water, which lead to a transportation-intensive management. In this project, different processes for the sludge stabilization, drying, sanitation and metal removal are evaluated in order to facilitate the use of sludge as agriculture resource, biomass carrier in membrane bioreactors, or adsorbent material for biogas purification.

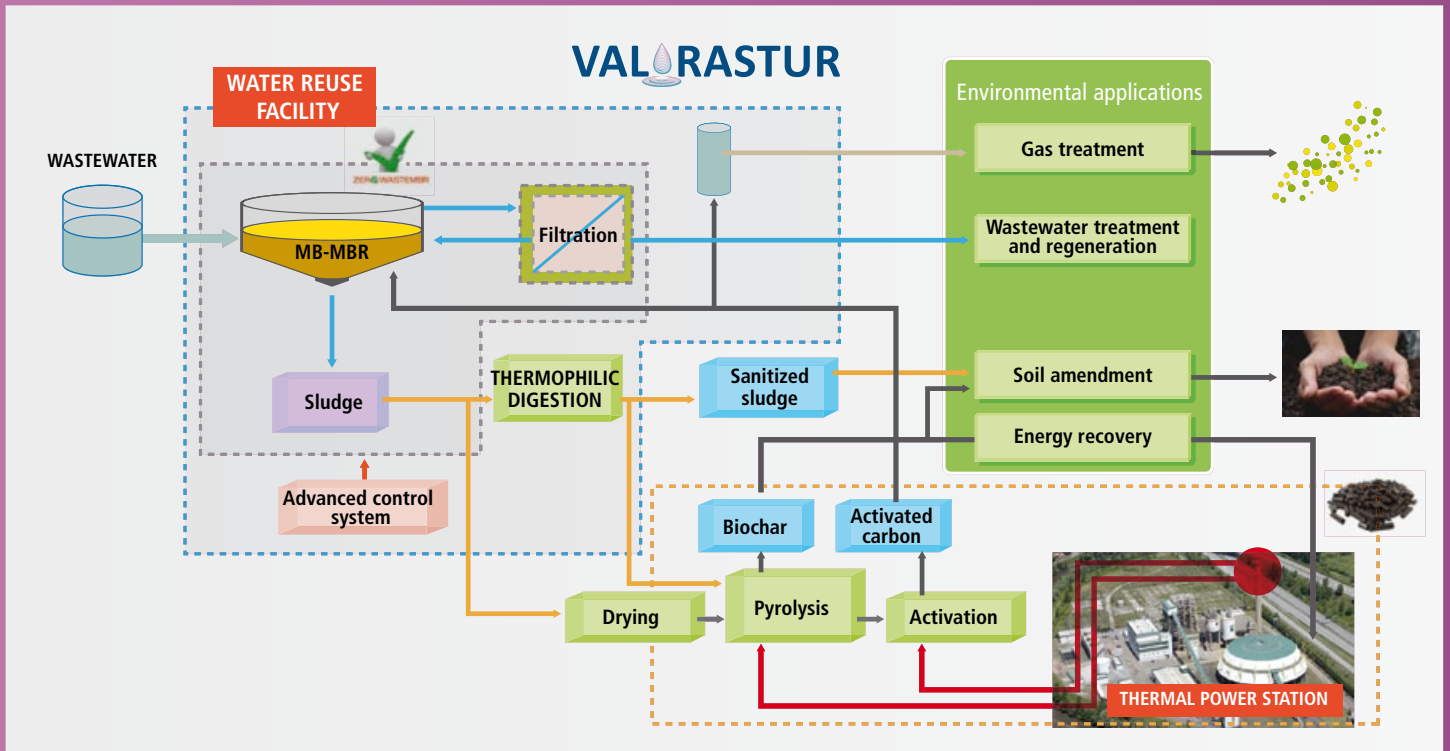
Another objective of VALORASTUR project is to improve the quality of sewage sludge by monitoring heavy metals in wastewater and sludge. The technical and economic viability of an adsorption-based separation process, using fly ash from thermal power plants will be also evaluated to avoid the presence of heavy metals in the resulting biosolids.



Location: EDAR San Claudio, EDAR Grado (Asturias)

Duration: From the 29th of September 2017 to the 28th of September 2019

Total Budget: 430,772.58 € **Aqualia:** 159,340.61 €



The dry and sanitized biosolids resulted from the proposed advanced sewage sludge treatment show characteristics that make them suitable to be used as fuels in the thermal power plants (HUNOSA, partner in VALORASTUR project). With this aim, the drying process and the combustion conditions of dry sewage sludge will be optimized. Furthermore, gaseous

off-streams from thermal power stations will be used to transform biosolids into activated carbon as a high-value product. These materials can be used in environmental applications like wastewater (adsorbent or biomass carrier in biological wastewater treatment systems) and gas treatment (remove odor-causing and other undesirable compounds).

VALORASTUR objectives are aligned with the package of EU measures on climate and energy that aims to improve the energy efficiency, and with the EU circular economy initiatives that propose the use of resources in a more sustainable way.

PROJECT PARTICIPANTS

- FCC Aqualia, S.A. (líder)
- Cogersa
- Hunosa
- Ramso



COLLABORATING PUBLIC ORGANISMS

- Universidad de Oviedo
- Instituto Nacional del Carbon (INCAR – CSIC)
- Fundación ITMA



DETAILS OF FUNDING

Funding: Programa RIS3-EMPRESA: Proyectos I+D+i diferenciales o tractores 2017.
Organism: Instituto de Desarrollo Económico del Principado de Asturias (IDEPA).
Project: IDE/2017/000787
Grant: Subsidy of 65% of Budget.

Funding received
Total: 296,202.18 €
Aqualia: 103,571.40 €