INCOVER

Innovative Eco-Technologies for Resource Recovery from Wastewater

Considering the current global water scarcity and the expensive operation and maintenance cost of **wastewater treatment,** the **INCOVER** concept has been designed to move wastewater from a waste stream into a source of new added-value bio-products, contributing to **circular economy**.

High-Rate Algae pond. © AQUALIA

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INCOVER project is developing innovative and sustainable technologies for a resource recovery-based treatment of wastewater. INCOVER technologies are being operated and optimized at three demonstration sites. From municipal, agricultural and industrial wastewater, they will permit to recover energy, nutrients and added-value products. To improve the efficiency of the processes, optical sensing, smart soft sensors and online operation systems are developed.

Case Study - Leipzig, Germany

Treated effluents: C-rich industrial wastes and grey wastewater
Technologies: Yeast based organic acid production, Hydrothermal carbonisation (HTC)
Bio-products: organic acids, biogas, biochar

Case Study - Chiclana & Almeria, Spain

Treated effluents: urban wastewater and molasses
Technologies: High Rate Algae Ponds, photosynthetic biogas upgrading, evaporative systems, planted filters, solar driven electro-chlorination, smart irrigation system
Bio-products: bioplastics (PHA), biomethane, biofertiliser, irrigation water

Case Study - Barcelona, Spain

Treated effluents: urban wastewater and agricultural runoff
Technologies: PhotoBioReactors, photosynthetic biogas upgrading, sludge treatment wetlands, solar driven ultrafiltration, sol-gel coatings adsorption columns, smart irrigation system
Bio-products: bioplastics (PHA), biomethane, biofertiliser, phosphorus, irrigation water

In comparison with conventional wastewater treatment plants, INCOVER solutions will allow :

- To reduce the energy demand (at least of 50%)
- To reduce GHG emissions up to 80% using CO_2 sequestrations processes
- To reduce the overall operation and maintenance cost by 50%

The different technologies are being evaluated according to their environmental, social and economic performances (Life Cycle Sustainability Assessment). Based on these results, a Decision Support System (DSS) is being developed to provide assistance to water authorities at comparing various technology alternatives and selecting the best future investments. The market uptake of INCOVER technologies and products are boosted by specific workshops with key stakeholders.

Dates: June 2016 - May 2019 **Total funding:** 7.2 millions € **Partners:** 18 partners from 5 countries

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