



## LIFE WIRE - Water Cycle Efficiency Improvement by Boosting Industrial Water Reuse



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| <b>Expedient</b>        | LIFE12 ENV/ES/000545                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Date</b>                          | 01-OCT-2013 to 30-SEP -2016                 | <b>Location</b> | Cataluña (Spain) |
| <b>Contact</b>          | Sandra casas Garriga <a href="mailto:scasas@cetaqua.com">scasas@cetaqua.com</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                      |                                             |                 |                  |
| <b>Coordinator</b>      | CETaqua, Centro Tecnológico del Agua, Fundación Privada                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                      |                                             |                 |                  |
| <b>Consortium</b>       | Area Metropolitana de Barcelona,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Ecológica Ibérica y Mediterránea S.A | Empresa Metropolitana de Sanejament S.A.    |                 |                  |
|                         | Clariant Ibérica Producción S.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Envitech a.s.,                       | Tratamientos y Acabados por Cataforesis S.A |                 |                  |
| <b>Objective</b>        | <p>LIFE WIRE aims to demonstrate the technical and economic viability of efficiently treating reclaimed urban wastewater for reuse in major industrial sectors. It specifically hopes to demonstrate successful combination of leading-edge technologies, including ultra-filtration (UF), carbon nano-structured material (CNM) and reverse osmosis (RO) to achieve the desired water quality efficiently.</p> <p>The project plans to test which combinations and configurations of these technologies are the most technically and economically viable to treat reclaimed urban wastewater for industrial use. It will notably evaluate CNM as a pre-treatment for RO and the synergic interaction between UF and CNM in terms of improvement of hydraulic performance and treatment efficiency.</p> <p>It will implement the tests at the Wastewater Reclamation Plant (WWRP) of El Prat, optimising the different elements within each tested configuration. It will also consider the most appropriate operational and cleaning strategies to minimise the consumption of energy and chemicals, increase the life-span of component parts – notably filters and CNM media – and minimise the production of by-product waste.</p> <p>The beneficiary will work with three partner companies from the major industrial sectors of the Barcelona area: chemicals; liquid waste disposal; and electro-coating. The aim is to create a system that is flexible enough to produce recycled water of different qualities for different industrial uses. They will also explore any adaptations that may be required in the industries to use the reclaimed water.</p> <p>The project will conduct technical and economic assessments of the process and subsequent waster reuse. It thus aims to demonstrate its numerous financial and environmental advantages, compared to conventional water treatment and industrial water consumption. Finally, it will foster such water re-use initiatives through knowledge transfer to industrial end-users and WWTPs.</p> |                                      |                                             |                 |                  |
| <b>Expected results</b> | <p>The project expects to achieve the following results:</p> <ul style="list-style-type: none"> <li>• Demonstration of successful combination of leading-edge technologies to treat urban wastewater for reuse in different industrial sectors;</li> <li>• Definition of optimised processes - including smart operational and cleaning strategies - for different water quality grades;</li> <li>• Successful reuse of the reclaimed water in several industrial applications – with clear identification of any necessary industrial adaptations;</li> <li>• Total water consumption savings of up to 100% for metal coating; up to 90% for marine fuel waste and industrial residues treatment; and up to 80% for chemicals, dyes and pigments; and</li> <li>• Quantification of all the economic and environmental benefits arising.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                      |                                             |                 |                  |