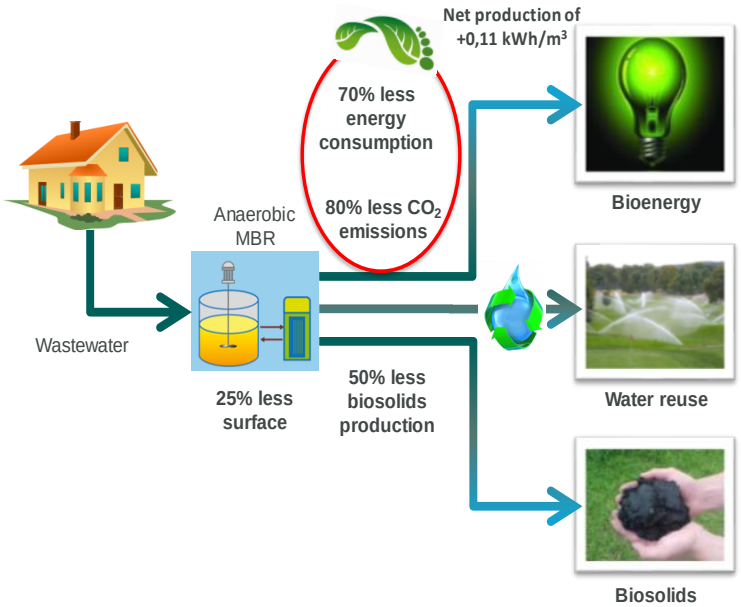
XXI century: "FROM WASTEWATER TO RECLAIMED WATER"

Wastewater treatment technologies based on aerobic processes are characterised by a very high energy demand and the generation of undesirable outputs, mainly greenhouse gases and sludge, thus showing poor environmental performance. Such systems do not take advantage of the potential energy contained in the organic matter and the fertilizer value of nutrients (phosphorus and nitrogen).

Anaerobic digestion transforms the organic matter into biogas – a renewable source of energy – with low sludge production and, combined with membrane filtration, can treat and disinfect successfully low-loaded wastewaters at ambient temperature.

A new paradigm for wastewater treatment based on sustainability has been conceived. Wastewater now turns into a source of energy and nutrients, as well as into a recyclable resource. In this context, LIFE MEMORY project targets for the sustainable production of reclaimed water demonstrating the success of an innovative technology, the Anaerobic Membrane Bioreactor (AnMBR).



Within this context, the LIFE MEMORY Project aims to demonstrate at industrial prototype scale the technical and economic feasibility of an innovative technology, AnMBR, as an environmentally friendly alternative to conventional urban wastewater treatment processes.

TABLE OF CONTENTS

Results from **LIFE MEMORY** Project are presented in the 14th IWA Leading Edge Conference on Water and Wastewater Technologies

After almost 10 months operating the AnMBR system implemented in Alcázar de San Juan (Spain), first results were presented in the 14th IWA Leading Edge Conference on Water and Wastewater Technologies (29 May - 2 June 2017, Florianópolis, Brazil).

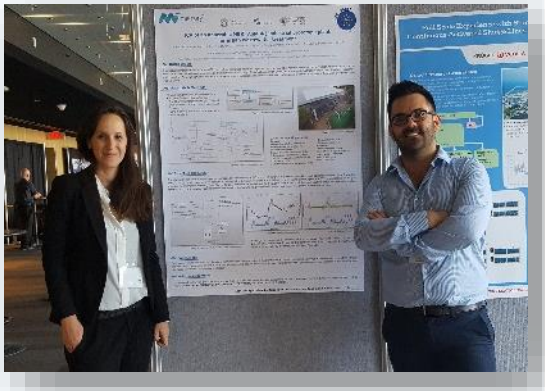
Preliminary results indicated an adequate adaptation of the biomass to the operating and environmental conditions. The methane content in the biogas increased progressively during the first weeks of operation until reaching stable values of around 65% in average.

The Instrumentation, control & automation system, presented in the ICA 2017

The instrumentation, control and automation (ICA) system developed as part of the project was presented at the 12th IWA Specialized Conference on ICA (11-14 June 2017, Québec, Canada).

The goal of the ICA system, which includes different advanced control systems, is not only to facilitate system management and manpower and energy savings, but also to achieve high degrees of process optimisation.

Preliminary results indicated that the ICA system will allow achieving considerable savings in the operating cost of the filtration process.



The AnMBR technology, a key topic in the MyBRM 2017

LIFE MEMORY was exposed at the MyBRM 2017 conference (14 June 2017, Barcelona, Spain).

The conference tackled the question about the degree of maturity of AnMBR technology to be implemented with guarantees for the treatment of industrial and urban wastewaters. Main improvements carried out over the last few years were stated.

At WATEC 2017, circular economy and **LIFE MEMORY** go hand in hand

The implementation of the circular economy concept in the water sector was exhibited at the Water Technology and Environmental Control Exhibition & Conference (21-23 June 2017, Palermo, Italy).

AnMBR for urban wastewater treatment is a promising technology. It can be a net energy producer while the high quality and nutrient-rich treated water obtained is a valuable resource for irrigation use.

LIFE MEMORY in the workshop "Membranes for water treatment and reuse"

Life Memory took part in the workshop "Membranes for water treatment and reuse" in Girona (15 June 2017, Spain).

Preliminary results were presented and special attention was paid to the high COD removal efficiency as well as the low sludge production achieved.

RETEMA publishes the article "AnMBR technology: an alternative to exploit urban wastewater potential as a source of resources"

Number 196 of the Spanish technical magazine RETEMA (www.retema.es) publishes the article "AnMBR technology: an alternative to exploit urban wastewater potential as a source of resources".

The authors highlight the potential of AnMBR technology to close the loop towards a circular economy in the water sector. Resource recovery (water and nutrients, mainly) and energy production are some of the main benefits.

3rd NEEMO visit to **LIFE MEMORY** project in Madrid

This meeting between the consortium of the LIFE MEMORY project and Neemo was hold on 22th May 2017 to review the status of the actions' implementation, to remind the required activities in terms of dissemination and present their status, as well as to check administrative and financial aspects.

At the end, it was also time for the partners to have technical discussions.

PROJECT PARTNERS

FCC Aqualia

Category: **Coordinating Beneficiary**

Aqualia is the company in the FCC Group managing all the activities regarding the integral cycle of water. Aqualia´s activity comprises 3 major areas among which it creates synergies in knowledge, research and methodology: management of public water services, design and construction of hydraulic infrastructures and treatment plants, as well as global solutions for the use of water in industry.

KOCH Membrane Systems

Category: **Associated Beneficiary**

Every day, we help thousands of companies like yours reduce their water footprint, increase productivity, and lower operating expenses. And we're helping millions of people live healthier lives by developing better ways to purify the world's water sources, improve food processing, and more.

Universitat de València

Category: **Associated Beneficiary**

Research team of Universitat de València has studied during the last decades different wastewater treatment processes: biological nutrient removal and recovery, primary sludge fermentation, anaerobic processes (MBR and digestion), microalgae cultivation, co-digestion... The research is addressed by experimental studies mainly at pilot-scale for comprehensive process modelling.

Universitat Politècnica de València

Category: **Associated Beneficiary**

Research team of Universitat Politècnica de València has been working for more than two decades on the integrated physical, chemical and biological processes that take place in wastewater treatment plants (WWTP), i.e. removal and recovery of nutrients, membrane bioreactor (MBR),microalgae cultivation…These studies have been carried out focussing on process modelling and simulation, as well as control systems development for optimising process operation.

FOLLOW US

www.life-memory.eu