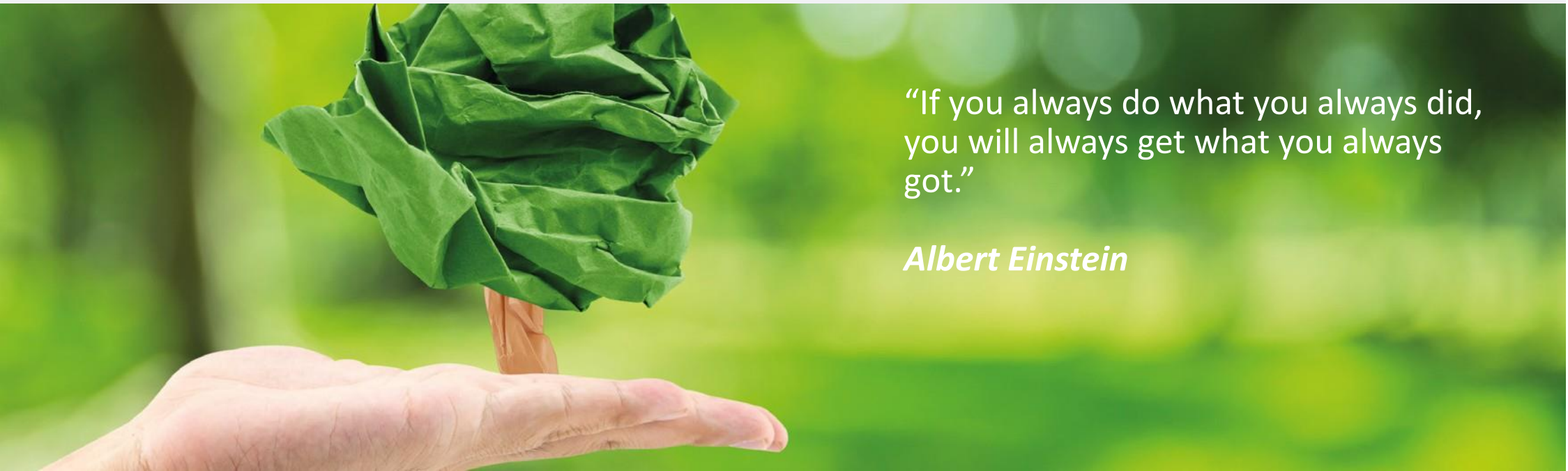


CETENMA

Centro Tecnológico
de la Energía y del
Medio Ambiente



Presentación General



“If you always do what you always did,
you will always get what you always
got.”

Albert Einstein

The Technology Centre for Energy and the Environment, **CETENMA**, is a private, non-profit Business Association, which was set up to support companies with **technological research, development and innovation** in all areas relating to Energy and the Environment, thereby assisting them in becoming more competitive.



Technology Centre
no. 116 in the
National Register of
the Ministry of
Economy and
Competitiveness

R&D Entity no.
0133072008 by the
Ministry of Industry,
Energy and Tourism

Research Results
Transfer Office no.
181. by Ministry of
Economy and
Competitiveness

Training Entity no. 1100
by the Regional
Employment and
Training Service of
Murcia Region

Our Mission: our raison d'être

Our Vision: our goal

M Our raison d'être is to ensure the full satisfaction of companies via the provision of applied research, technological development, technology transfer and innovative technological services aimed at making them more competitive in a sustainable manner and within the framework of partnership with other agents.

V To become a prestigious organization that sets the standard in terms of Water technologies, Bioenergy, Renewable Energy and Energy Efficiency with a highly specialized infrastructure of services, equipment and staff that is continually expanding and is capable of generating and boosting innovation in companies



“We optimize processes with a circular economy approach”



Energy

Improving the use of energy in industrial processes and products during all their Life Cycle

Managing, monitoring and controlling the use of energy.

Developing, integrating and demonstrating the viability performance of renewable energies



Water

Designing, optimizing and validating WWT and reuse technologies.

Scaling up technologies and demonstrating their viability in the market (from Lab to market)



Waste

Waste and by-products Valorization through thermal and biological technologies

Obtaining energy and/or High Added value products from wastes

Our
Team



Our
Main Asset

cetenma

Centro Tecnológico
de la Energía y del
Medio Ambiente



Agencia de
Ve a Co

Nuestros Laboratorios



Solar Lab



Calibration Lab



Engines Lab

Our Laboratories



Waste Valorisation and Biorefinery Lab



Our Laboratories



Water Lab and Waste Water Pilot Test Area

Our Client's Voice

“Our collaboration with CETENMA in the context of one of the R&D&i project which is coordinated by us is being very productive. CETENMA is a rigorous and professional partner which is supporting the activities of companies of the consortium in an effective way by research studies in critical designing and operating aspects of technologies that we are developing.”

Marina Arnaldos Orts, Dpto. I+D+i ACCIONA Agua.

Rigorous and professionals

Marina Arnaldos

“We trust in CETENMA because their proactive inclusion in giving responses to the company needs in every moment and working in that in an efficient way. What we appreciate most is their loyalty, solvency, proactiveness, response agility and efficiency. We would count with them again for the preparation of local, national or european proposals, and as regional partner for project development. We emphasize their assistance for different regional and national requests askings. Thanks to CETENMA, we have improved our networking in every levels and simplified the access to funding and grants sources. We think that CETENMA should only improve the fortifying of their technical departments in a way that allow them to develop project in a global way. ”

Ignacio Buería, BUGGYPOWER.

Efectiveness and response agility

Ignacio Buería

Our Client's Voice

“From CETENMA we outline their technical rigor and commitment. Our vision of excellence has been endorsed by their professionalism and together we have achieved success in project numbers.”

*José Albaladejo, Director General,
Aguas de Murcia.*



“Our confidence in CETENMA is due to its nature as a technology center directed to meet companies needs. What we appreciate most is the professional team that integrates its ability to provide innovative solutions to the problems we face, namely the use of industrial by-products for the production of high value-added products. We have also improved our ability to work in European projects consortia with other companies, complementary to our capabilities

*Dr. José Carlos Quintela, Director
General Científico, NATAC*



La voz de nuestros clientes

“Algunos de los aspectos que más apreciamos de CETENMA son la disponibilidad y experiencia además de la confianza que nos suscita su contrastada solvencia. De nuevo contaríamos con ellos para mejorar aspectos ambientales como el ahorro de agua en procesos y la eficiencia energética.

Destacaríamos de su equipo la capacidad de gestión integral de proyectos, desde la definición, gestión de posibles ayudas, y ejecución de proyectos.”

Pedro Rodríguez, Área Medio Ambiente Dársena Cartagena, NAVANTIA.



**Integral
Management
Capacity**

Pedro Rodríguez

“Valoramos muy positivamente el alto nivel técnico, disponibilidad y amabilidad del personal del Centro, además del alto conocimiento tecnológico y de normativas que rigen el mercado actual. Somos optimistas y sabemos que esta relación dará lugar a proyectos muy beneficiosos para TAKASAGO, que nos ayudarán a reducir los costes gracias a un uso más eficiente de la Energía.”

*Fernando Manuel Martínez García,
Director Técnico e IT, TAKASAGO.*



**High
technical
level**

Fernando Manuel

Our Client's Voice

“We have been working with CETENMA in several EU projects, such as SWAM and MISSTOW, and collaborated in some others. It was not only a pleasure to work with such a professional staff, but also we found out that this leads to very productive and realistic approaches. I found out that they have a real contribution to the projects and have practical recommendations.”

Prof. Uri Marchaim, Jefe del Departamento Regional de Biotecnología y Desarrollo, MIGAL- Galilea Research Institute, Israel.



“Through collaboration with CETENMA we have improved considerably our international relationships and it made possible the creation of an important framework. What we value most is the professionalism, training, enthusiasm and humanity of the people who work there.”

Guillermo Rodríguez, Investigador Biotecnología de los Alimentos, Instituto de la Grasa, CSIC.



La voz de nuestros clientes

“We have found CETENMA as a valuable partner in recent years, offering advanced technical solutions, appropriately and quickly, as well as possible collaborations in R&D. It has large well-trained technicians, both project management and researchers. On the other hand, maintains an updated information service that is useful to us in our day to day.”

*Elena Campos Pozuelo, Responsable
de Proyectos de I+D. VALORIZA
AGUA (GRUPO SACYR)*



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*Javier de la Fuente, Gerente/
Manager, TECNOPROIN*



Our Figures

Indicadores 2021



PhD



Advanced
Technical
Degrees



Medium Technical
Degrees



Junior Researchers



Total Staff

71%
Public Competitive
Funding

28%
Private
Funding

1%
Public Non-
Competitive Funding

**Datos económicos
globales**

Total Income 2021: 1.293.815 €

Associated Companies 32 | Client Companies 74

Economic Impact

4 New Products

In the market in the last 3
years

11.478.000,00€

Obtained funds for other
entities 2019-2020

5.944.000,00€

Obtained funds for R&D other
entities 2019-2020

Our Network



Our References



European Projects

VALUEWASTE

VALUEWASTE is a European initiative coordinated by CETENMA funded by the European Commission with 8.3 M €, under the call H2020-SFS-2018-1. The project consortium is made up of 17 partners from different countries across Europe.

VALUEWASTE proposes an integrated approach in urban biowaste upcycling for the production of high-value biobased products, developing the first complete solution to fully valorize biowaste that can be replicated across Europe. We will implement three new value chains that will use urban biowaste as raw material for its valorization into high-value end products in a cascading process, generating economic, social and environmental benefits: food & feed proteins and other ingredients, and biobased fertilisers.



This Project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 818312



European Projects

HOOP

HOOP will help to unlock bio-based investments and to deploy local bio economies in Europe offering Project Development Assistance (PDA) to a group of 8 lighthouse cities and regions – providing them with the technical, economic, financial and legal expertise needed to develop concrete investments to valorise OFMSW (Organic Fraction of Municipal Solid Waste) or UWS (Urban Wastewater Sludge) with the aim of obtaining safe and sustainable bio-based products.



This Project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 101000836



European Projects

LIFE TRANSFER

The LIFE TRANSFER project (Transplantation of seagrasses for the transitional recovery of the ecosystem aims to improve the conservation status of coastal lagoons due to the regression of seagrass meadows in these places belonging to the Natura 2000 network. Seagrass meadows formed by phanerogams are recognized as a priority for the conservation of coastal lagoons, representing one of the most highlighted examples of organisms that help to recover marine ecosystems. Specifically, in the Mar Menor lagoon, recolonization actions of the *Cymodocea nodosa* species will be carried out, an autochthonous species that would help to recover the lost habitat.

The project will be implemented in 4 demos (Italy, Spain and Greece) in the lagoons of Goro, Comacchio, Caleri and Canarin (IT), Avrakinos (EL) and Mar Menor (ES) and has a total budget of €4,214,120 and €3,160,590 of EC contribution.



European Projects

LIFE WASTE2BIOFUEL

The LIFE WASTE2BIOFUEL project aims at developing an Integrated Gasification Fisher-Tropsch (IGFT) process for the conversion of the organic fraction of MSW into an environmentally friendly energy source. The project has a clear demonstration value since the main objective is to validate and demonstrate technically and business feasible solution, with clear positive effects on the environment. Furthermore, the proposed actions in LIFE WASTE2BIOFUEL must be able to demonstrate the replication business model for several industrial sectors based on MSW recovery products and energy. The project is funded by LIFE+ 2016 Programme with 973.429 € and is led by Técnicas y Tratamientos Medioambientales, S.A.U.



European Projects

LIFE B2E4sustainableWWTP

The aim of the project is to design, construct and demonstrate in an industrial scale a new concept of WWTP with energy valorisation of the biosolids previously separated before biological treatment, through gasification process and generation of electric energy using the produced syngas.

It is funded by LIFE+ 2016 Programm with 1.164.572 € and is led by The Research Committee of The Technical University of Crete..

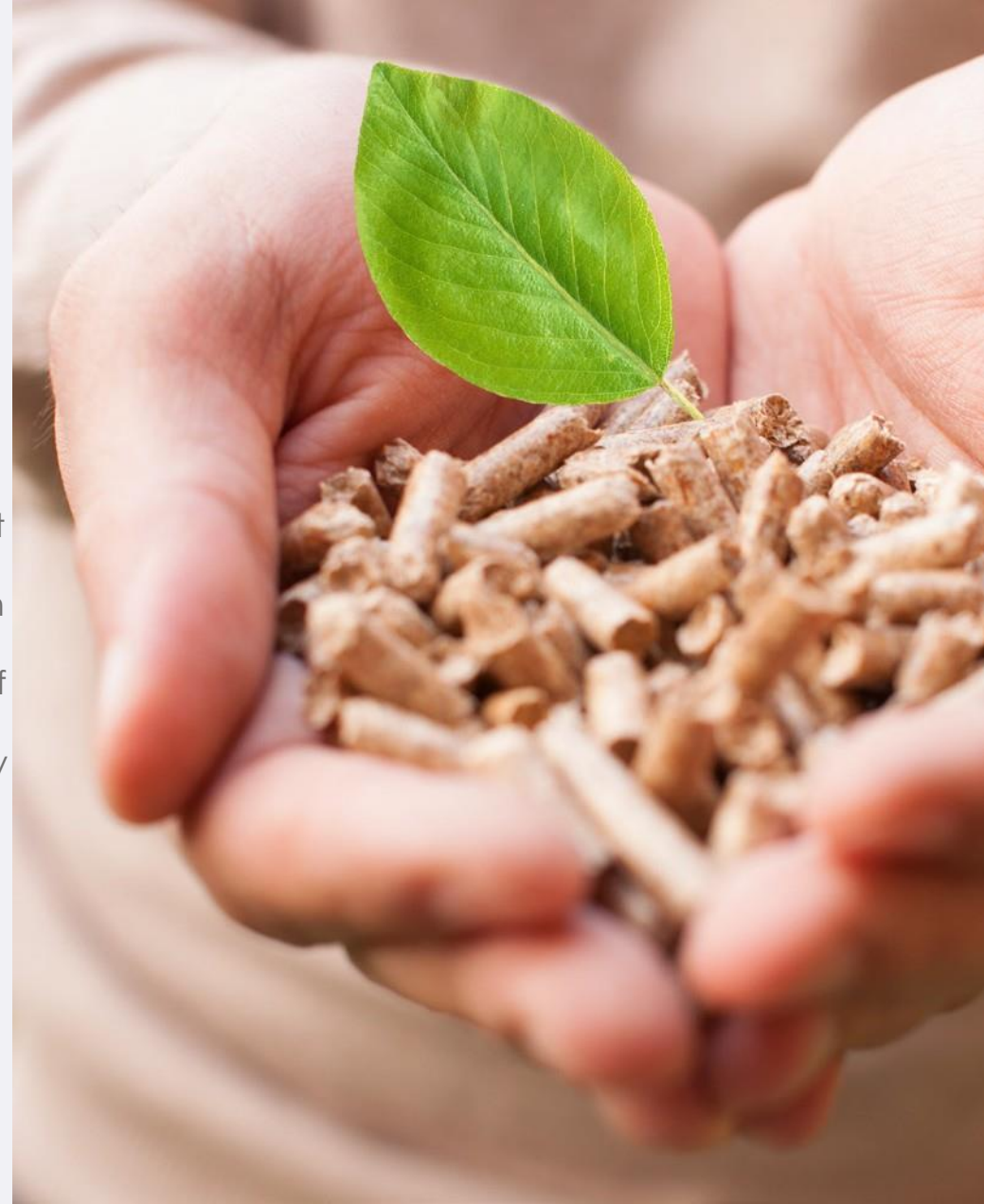


European Projects

ENERING

ENERING is a demonstration project involving the application of renewable energy solutions and energy efficiency improvements to reduce energy consumption and CO2 emissions in industrial parks, making them more sustainable. It is funded by the European Commission under the LIFE+ 2011 with 974,626 euros. The Public Land and Equipment Society in the Region of Murcia (SEREMUR) leads the project, and join the consortium the Institute for Development of the Region of Murcia (INFO), the Construction Technology Centre of the Region of Murcia (CTCON), the Technology Center for Energy and the Environment (CETENMA), the Agency for Energy Management in the Region of Murcia (ARGEM) and the Polytechnic University of Cartagena (UPCT).

<http://www.eneringlife.eu/>



European Projects

SUDOE STOP CO2

STOP CO2 is a INTERREG V SUDOE Project financed with 889.927 € by the European Regional Development Fund (ERDF) to improve efficiency in transport centers. The general objective of STOP CO2 is to Foster a low carbon Economy in construction and transport sectors, improving air quality in cities, acting in transport stations as a key element In energy policies and efficiency of urban centers. The Project is led by CTL Foundation with CETENMA and other French and Portuguese partners. The Project started on September 2016



European Projects

SUDOE COLEOPTER

COLEOPTER propone un enfoque integrado de renovación en edificios públicos, asociando desafíos sociales, políticos y técnicos. El enfoque será examinado en 4 edificios relacionados con niños y comunidad local: una instalación deportiva en Póvoa de Lanhoso-Portugal, un albergue en Cartagena-España, un centro de entretenimiento y ocio educativo para niños y jóvenes en Est Creuse-France y 1 edificio nuevo en Est Creuse.

El enfoque se replicará en Escaldes-Engordany (Andorra) para validar su transferibilidad.

El cambio esperado será la implementación de un enfoque participativo sobre eficiencia energética y mayor participación de los actores locales en este tema, que conduzca a una mejor eficiencia de las políticas energéticas y mejores tasas de renovación públicas y privadas.

En el proyecto participan 8 entidades de España, Francia y Portugal. El proyecto cuenta con una financiación FEDER de 1.091.208 €.



European Projects

SUDOE ENERGY PUSH

Propone una solución innovadora para la gestión global de las viviendas sociales localizadas en territorio SUDOE.

Tomando como base la combinación del concepto de renovación pasiva, fundamentado en el principio NZEB (Nearly Zero Energy Buildings) que tiene como objetivo fundamental minimizar las necesidades energéticas de los edificios, y la metodología BIM que favorece la experimentación conjunta y una mejor calidad constructiva, se propondrán soluciones energéticas para las viviendas sociales del espacio SUDOE. Así, logrando un mejor comportamiento térmico de los edificios se pretende conseguir un doble objetivo: por un lado reducir sus consumos y emisiones y, por otro, mejorar el confort en el ambiente interior para sus habitantes superando los riesgos de pobreza energética.

CETENMA comparte consorcio con entidades de España (Fundación CTL, AVRA, GESVICAN y Universidad de Cantabria), Francia (Tipee, ALEC) y Portugal (ADENE y Universidade do Porto).

El proyecto cuenta con un presupuesto total de 1.849.943 € y una financiación FEDER de 1.387.457,64 €.



Regional Projects

RIS3MUR HIDRÓGENO VERDE

The strategic project RIS3Mur HYDROGEN FUEL CELLS FROM RENEWABLE SOURCES FOR GREEN LOGISTICS AND TRANSPORT is funded by the Regional Government of Murcia, within the framework of the European Regional Development Funds 2014-2020. REGENERA LEVANTE coordinates the project and IDEA INGENIERÍA, GRUPO CALICHE, UPCT and CETENMA participate. The general objective of this project is the development and application of a hydrogen cell as a sustainable fuel, obtained from existing photovoltaic renewable sources and its validation and demonstration in real industrial environments, achieving an increase in efficiency and a reduction in costs and emissions.

The budget is 604,437.10 €



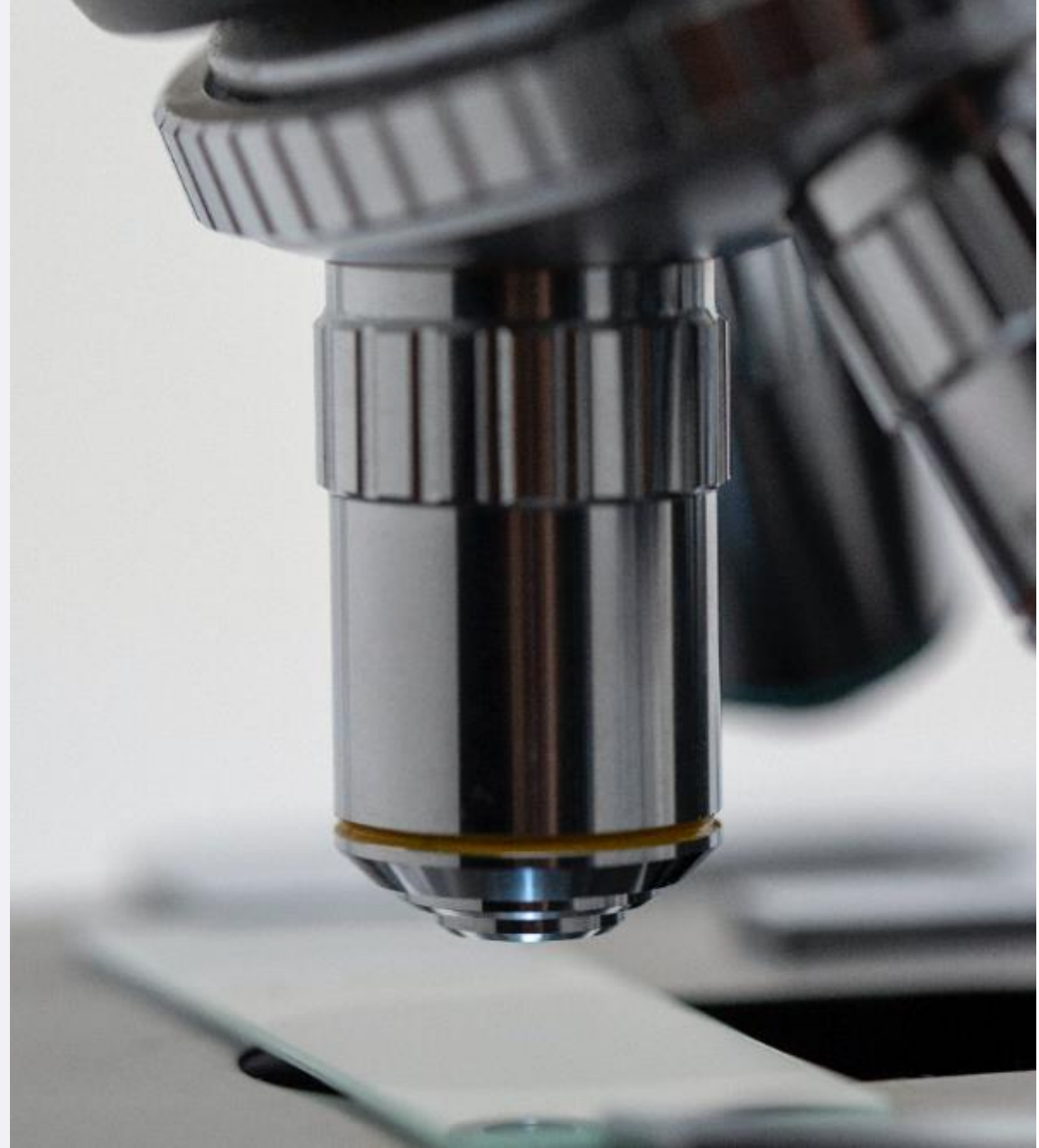
Fondo Europeo de Desarrollo Regional (FEDER)
Una manera de hacer Europa



National Projects

RETOS MONITOCOES

The project has been funded by the Ministry of Science and Innovation under the Call Retos Colaboración 2019. The project is led by REGENERA and INGENIATIC, UPCT and CETENMA participate. The MONITOCOES project aims to develop a new continuous and real-time monitoring system that allows the determination of emerging organic pollutants, pathogenic microorganisms and the control of other residual water quality parameters, able of operating in the sewage network. More specifically, 4 devices will be developed, a benchtop fluorescence spectrophotometry unit to be located at the entrance of a WWTP, 2 fluorescence spectrophotometry units to be placed inside the sewage network and 1 microscopic spectrophotometry desktop equipment of fluorescence. In addition, a web platform will be developed for the reception, visualization and analysis of data once the system has been calibrated. The total eligible budget of the project is € 639 981.43



National Projects

RSU-OIL

Project funded by Ministerio de Economía y Competitividad with 1.276.486,50 € under INNPACTO Program. Led by ELECOFASA, CETENMA and RIVAMADRID. The general objective is to design, develop and implement a technologically and economically feasible solution to valorise residual plastic streams recovered from waste management treatment plants, in order to produce synthetic fuels (diesel-like fuels) using thermochemical treatments.



Regional Projects

RIS3MUR DIRELMIVID

The strategic project RIS3Mur DIRELMIVID is funded by the Regional Government of Murcia, within the framework of the European Regional Development Funds 2014-2020. CETENMA coordinates the project where AZUD, EMUASA, ODINS and CEBAS-CSIC participate.

The general objective is the development and validation of three systems for the regeneration of treated wastewater with a level of technological maturity that allows its commercialization or implementation. The systems will be able of producing water suitable for irrigation from WWTP secondary effluents in an economically efficient way and will provide significant removal rates for contaminants of emerging concern, including drugs related to the treatment of COVID-19. The systems will also have the necessary elements to be integrated into a digital platform that, through the sensorization of the regeneration-reuse system, and the development of associated models, will allow the optimal management of water resources through remote operation tools and support for decision making.



Fondo Europeo de Desarrollo Regional (FEDER)
Una manera de hacer Europa



Proyectos Regionales

PROYECTO TECMOINN

Implementación y testeo de TECnologías de MONitorización INNovadoras en instalaciones y equipos industriales remotos o aislados.

Objetivo: investigar las tecnologías necesarias para el desarrollo de un sistema independiente y no invasivo de bajo coste y basado en hardware libre capaz de monitorizar en tiempo real tanto instalaciones como equipos industriales para:

(1) optimizar su funcionamiento a lo largo de la vida del equipo, comparando el régimen real de funcionamiento del equipo con su régimen óptimo teórico y tomando las acciones necesarias para su convergencia.

(2) incrementar su fiabilidad, monitorizando y evaluando las variables más críticas del sistema para la detección temprana de fallos.

(3) reducir los costes de operación, reduciendo las operaciones supervisión in-situ.

Presupuesto: 62.440 €



Proyectos Regionales

PROYECTO ECOMETANO

Producción sostenible de biometano a partir de biogás.

En este proyecto estudiaremos la metanización biológica, donde el biogás generado durante un proceso de digestión anaerobia será combinado con hidrógeno (producción electroquímica a partir de electricidad renovable) ya sea dentro del propio digester (in-situ) o en un reactor externo (ex—situ) y se volverá a introducir en el reactor con el objetivo de incrementar la producción y calidad del metano.

Objetivo: demostrar la viabilidad de las plantas de biogás de pequeño y mediano tamaño para convertirse en instalaciones generadoras de combustibles alternativos enriquecimiento el biogás en metano biológico utilizando el proceso de metanización biológica.

Presupuesto: 56.671 €



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